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A STRATIFIED RANDOM SAMPLE OF THE
 CULTURAL RESOURCES IN THE CANYONLANDS
 SECTION OF THE MOAB DISTRICT

Richard A. Thomason
 1979



CULTURAL RESOURCE SERIES

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A STRATIFIED RANDOM SAMPLE OF THE CULTURAL RESOURCES
IN THE CANYONLANDS SECTION OF THE MOAB DISTRICT
OF THE BUREAU OF LAND MANAGEMENT
IN EASTERN UTAH

Prepared for the Bureau of Land Management

under the terms of contract no.

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by

Richard A. Thompson

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FOREWORD

This is the first in a series of U.S. Bureau of Land Management monographs dealing with the historic and prehistoric, "cultural resources" in Utah. "A Stratified Random Sample of the Cultural Resources in the Canyonlands Section of the Moab District" was prepared by the firm of International Learning and Research, Inc. and Dr. Richard A. Thompson, Archaeologist on the faculty of Southern Utah State College in Cedar City. Information within this monograph was compiled under contract with BLM for a Class II Cultural Inventory of lands scheduled for a grazing environmental statement.

BLM is charged with the protection, study, and enhancement of varied and valuable cultural resources on nearly 23 million acres of public lands in Utah. Consequently, the Bureau must assure these resources are afforded proper protection and preservation, with consideration for the best scientific and public use. Part of this responsibility is to disseminate significant new information to the scientific community and public at large for their use. As a step towards filling this latter obligation, I am pleased to present this first volume in what promises to be a unique series of publications on Utah's past.

Paul L. Howard
Utah State Director
Bureau of Land Management

ABSTRACT

The one percent stratified random sample of 1,003,000 acres comprising BLM's Canyonlands planning area yielded 225 prehistoric sites. Stratified by vegetation, this small percentage inventory served to test the sampling design and allow for future refinements.

Analysis of recovered data by site function, cultural affiliation, topography and vegetation was completed on all four planning units. Tentative site density projections based on the sample were developed as a BLM management tool.

Richard E. Fike
Bruce Louthan
Archaeologists

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ACKNOWLEDGMENTS

The axiom that all research is a collaborative effort is so frequently repeated as to make it appear trite. The fact remains, however, that the statement is a true one and the report herein submitted is further testimony to its validity. In this collaboration the first expression of appreciation is due the eight members of the survey team who brought to the project a varied background of experience and interest but who shared a common willingness to expend the energy necessary to keep the project moving within the constraints of available time and funds. Members of the survey group included Michael Benson, James Dykman, Fred Gierke, Asa Nielson, Michael Smith, and Alan Spencer of Brigham Young University, Barbara Burden of Southern Utah State College and Linda Thompson of the University of Oklahoma.

For advice and counsel at many points appreciation must be expressed to Richard Fike, State Archeologist with the Bureau of Land Management, and to Bruce Louthan, archeologist in the Moab District of the BLM. Special thanks are due to Dr. Blair Maxfield of Southern Utah State College for writing the material on the geology of the project area for this paper. Much is also owed to Janet Leek and Daphne Dalley for enduring the tedium of seeing this manuscript through its later drafts.

My greatest appreciation must be expressed to my wife, Georgia, for enduring the project through its many vicissitudes and also to my daughter Chelle who, happily, is still young enough to believe that all field crews are assembled for her benefit.

A STRATIFIED RANDOM SAMPLE OF THE CULTURAL RESOURCES
 IN THE CANYONLANDS SECTION OF THE MOAB DISTRICT
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CHAPTER I. INTRODUCTION.

This report summarizes the data recovered during the course of an intensive archeological survey of 63 quarter section quadrants distributed over four planning units within the Moab District of the Bureau of Land Management. The work was conducted under terms of contract No. YA-512-CT7-32 concluded between the Bureau of Land Management and International Learning and Research, Inc., of Cedar City, Utah.

Under the provisions of the Antiquities Act of 1906, the Reservoir Salvage Act of 1960 as amended by P. L. 93-191, the National Historic Preservation Act of 1966, and Executive Order 11593, all Federal agencies are required to identify, evaluate, and protect prehistoric and historic cultural resources on lands subject to their jurisdiction. A recent court decision has required the Bureau of Land Management to prepare environmental impact statements on grazing lands within a thirteen year period. The present contract marks an initial step in the Bureau of Land Management's compliance with that decision.

The contract under which this work was conducted called for a Class II intensive survey of randomly selected quadrants within each of the BLM planning units to be studied. For the Canyonlands Range project, a 1% sample of the total of 1,000,300 acres was to be obtained through the survey of quarter section quadrants selected in proportion to the area of the major vegetation zones previously identified by the BLM. The distribution of these quadrants is as follows:

<u>Planning Unit</u>	<u>Total Acreage</u>	<u>Sample Quads</u>	<u>Sample Acreage</u>
Dolores	102,000	7	1,120
Castle Valley	223,000	14	2,240
Indian Creek/Dry Valley/Monticello	509,300	32	5,120
Beef Basin	<u>166,000</u>	<u>10</u>	<u>1,600</u>
	1,000,300	63	10,080

BLM personnel selected the quadrants to be inventoried and plotted them on planning unit maps prior to the start of field work. The contractor then searched government and university records to ascertain if previously recorded sites were to be found within the quadrants in order to avoid assigning new numbers to known sites. Survey teams were also expected to locate at least one USGS corner marker in each quadrant prior to the start of the inventory.

The contract definition of an intensive inventory states that it, "shall consist of a high intensity, total, on-the-ground assessment in sufficient detail to locate, identify, and analyze all visible cultural resources, both historic and prehistoric." The contract then stipulates the spacing required to meet the definition of intensive coverage with the proviso that, "The inventory quadrants shall be covered entirely on foot by adjacent and parallel, 'search-line' sweeps or transects across the units, using crews whose individuals are spaced not more than 50 feet apart. This spacing will be maintained except in those instances where the COAR gives a relief from this requirement. Upon completion of a transect, the next adjacent transect shall be inventoried in a like manner. No uninventoried spacing shall occur between transects, and all of each transect shall be inventoried."

Direction of the Canyonlands Range sampling project was the responsibility of the primary contractor, Richard A. Thompson, Vice-President of International Learning and Research, Inc. and Professor of Anthropology at Southern Utah State College, Cedar City, Utah. James L. Dykman of Brigham Young University supervised the actual field work assisted by Asa S. Nielson of the same institution. Both of these men functioned as crew leaders during the actual survey work. Field workers included Michael Benson, Fred Gierke, Michael Smith, and Alan Spencer of Brigham Young University, and Barbara Burden and Linda Thompson of Southern Utah State College.

Field work began on March 23, 1977, and continued on a five day per week basis through May 4, 1977. This involved a total of 31 days in the field. One day was lost to adverse weather conditions which meant that a total of 240 worker days were needed for the examination of 63 quarter section quadrants. The quadrants were thus inventoried at an average rate of 3.81 per quarter section. This rate was safely within the target ideal of 4.0 worker days per quadrant.

Prior to the start of field work it was decided that crews would, wherever practical, live in motels and take their evening meals in local restaurants. Breakfast and lunch would be prepared in the rooms and in the field with supplies readily available in local stores. It was believed

that the slightly higher costs and the occasional increase in travel distance would be offset by the advantages of greater comfort for the crew and the reduced time needed for general housekeeping chores. Field camps were to be used only where logistic considerations made it impossible to base in nearby towns.

In keeping with this decision, then, the crew lived in Monticello during the survey of the Indian Creek planning unit and for a brief part of the work in the Castle Valley unit. Headquarters were shifted to Moab for most of the Castle Valley phase of the project and for all of the work in the Dolores planning unit. Only in the case of the Beef Basin phase of the project was a field camp used for about 6 days.

Field crew concensus at the conclusion of the field work clearly favored using the town-based approach whenever it proved practical. Advantages cited included a reduction in essential chores at the end of the working day, the obvious desirability of hot showers, and the greater opportunity afforded each individual to isolate himself after the daily demands for cooperative work.

Out of the 63 quadrants surveyed, it proved possible to locate USGS section corner markers or quarter section markers in only 27 cases. Some of the markers had necessarily been set in washes where periods of heavy runoff had resulted in their destruction. In other instances the markers appear to have been removed by vandals. In the case of six quads in Beef Basin and one in the Dolores planning unit, the land had not been surveyed and markers had never been placed. All markers actually found have been marked with a small, black triangle on the quadrant diagrams used to plot site locations.

In cases where markers could not be found, crews plotted their locations by triangulation on prominent topographical features that could be identified readily both on the maps and in the field. Once a point had been established, the distances could be determined accurately by pacing with appropriate adjustments to the length of the crew leader's stride. In all quadrants where markers could not be found, an additional pass was also made around the entire quad in order to make certain that the proper area had been covered.

The basic field method involved the division of the field workers into two four-member teams, each equipped with its own vehicle. The survey methods employed by both teams were the same. Once the quadrant corner

had been identified, the crew leader established the line of march by sighting with a tripod-mounted Brunton compass with proper correction from magnetic to true north. Landmarks were noted in order to aid the crew in maintaining the line of march.

Once this had been done, the crew leader took a position 7.5 meters from the corner on a line at right angles to the line of march and in the direction of the center of the quadrant. The other crew members then positioned themselves along this line at 15 meter intervals. The crew would thus be prepared to cover the ground in transects 60 meters wide, with each worker being responsible for the ground extending 7.5 meters to the right and to the left of his line of march. In general, then, a quadrant could be covered closely in 14 transects. Each worker would walk an average of 7 miles as the team covered one quad.

As the crews walked a transect, the crew leader would record the distance covered by counting his paces and using a mechanical counter to record every 10 or 20 meters as seemed most suitable. At periodic intervals which varied according to the terrain, the crew leader would call for flagging the course. The worker at the opposite end of the line would then affix flagging to a convenient bush or tree. Landmarks were used to maintain alignments with more distant features providing the greatest accuracy. In addition to this, the crew leader and the worker at the opposite end of the line made repeated checks with hand-held Brunton compasses. In cases of doubt, the compass would be set on the ground to insure more accurate leveling. On all subsequent traverses across the quadrant, the procedure remained essentially the same except that one member of the team would be assigned the task of collecting the flagging set during the previous pass.

The method described above proved workable, of course, under ideal conditions when the ground is fairly level or where slopes sustain a fairly even gradient over considerable distances. As the terrain becomes increasingly broken by ledges, washes, or hills, or as the juniper-pinon cover increases in density, greater reliance had to be placed on compass readings. Intervals between flagging were considerably reduced and the spacing between workers had to be checked more frequently.

There were thus times when the irregularities in the terrain reached such proportions that two adaptive strategies were required. In the first of these the four member team remained in tact. Often, however, a mesa top terminated in a precipice with some of the quadrant continuing out from

the base of the cliff. In other instances a quadrant would be divided by one or more small canyons presenting too much of an obstacle to be crossed repeatedly. In such cases, the team would survey the mesa top or other ground in one portion of the quad in the usual manner while making careful note of the distance covered up to the obstruction. With figures for the ground covered, it proved possible to calculate quite precisely the distance to be surveyed beyond the base of the cliff or on the opposite side of the wash or canyon. Even with their limitations, the 15' maps available provided more than adequate guidance for this form of adjustment.

In a few instances the four member teams were divided into two two-worker units. This proved particularly useful on narrow ridges or ravines as well as in some areas of extensive slickrock exposures. The terrain was covered as intensively as the topographic configuration would permit, but locational data necessarily relied more on triangulation from prominent features and less on paced distances.

At the beginning of the field work it was agreed that, since this was not a field school situation, the greatest efficiency in site recording would be attained by having one individual on each team carry out the same assignment in recording each site. The plan was followed and it contributed significantly to the effective speed of site recording. The crew chief always completed the site inventory form and the sketch map while one worker remained responsible for photographs and photographic records. The third worker usually handled locational data while the fourth team member gathered information on the slope and aspect of the site, its size and the flora of the area which the crew chief incorporated into the site notes.

The survey teams went into the field with no knowledge of the ecozone classifications assigned to each of the sampling units. It was assumed that this information was withheld so that the survey teams would use their own observations without the influence of prior judgements. The survey teams were instructed, however, to make the most accurate estimates possible of the percentage of each unit given to each ecozone encountered. No categories were stipulated since it was expected that these would emerge through observation. The resulting estimates produced the acreage totals given for each ecozone in the sample areas as they are summarized in Fig. 2. A discrepancy arises from the fact that, while the Bureau of Land Management assigned a single ecological classification to each sample unit, the field workers reported more than one ecozone in almost all quadrants.

Two examples should illustrate the problem. In the first instance, the survey teams recorded two sites in a quad which, it was later learned, had been classified as brushland. The field crew description did, indeed, indicate that the cover was predominantly brush. At the same time, however, the team leader noted that about 2% of the land in one corner of the unit had a dense juniper-pinon overstory. Both sites were located in the small forested area.

In the second example, the sample unit was classified as wasteland. Field reports indicate that from 75% to 80% of the quad was taken up with the talus slope and the sheer cliff face of Bridger Jack Mesa. This area would clearly fall within the wasteland category. The remaining 20% to 30% of the quad was on the mesa top. Although the wasteland classification was uniformly applied to the entire unit, the two sites found on the mesa top were in a fairly dense juniper-pinon stand.

It was not until the field work was over that it was learned that the Bureau of Land Management had classified the quads under five ecological headings. These categories included juniper/pinon, sage brush, desert shrub, grass, and wasteland. Without this information the survey teams had used the classifications juniper/pinon, brushland, and wasteland. An examination of site reports, quadrant vegetation summaries, and site photographs indicated that, while some of the sage brush areas could be identified, the work could not be completed with any consistency. In many cases the difficulty centered around the fact that there appeared to be a mixture of sage brush and other shrubs so that dominance, at best a professional judgement, could not be determined. In view of this difficulty, it was decided to continue with a single, generalized brushland category.

The problem with the grassland classification was somewhat different. Field teams early reported sites located in grassland. In these cases, however, narrative field reports indicated that the areas in question had been chained. The project director thus arbitrarily reassigned these sites to the juniper-pinon ecozone. From the point of view of range management personnel the grassland designation is an accurate assessment of the use-potential of the land. It is a matter of great concern to the archeologist, however, that the quadrant is grassland only because the original vegetation has been removed. Although the archeologist does not assume that lands remained unaltered by prehistoric users, he finds it important that lands should be classified according to their prior modern natural condition and not according to their recently altered state.

Under the circumstances, then, the grassland category was eliminated. A major consideration was the fact that the validity of the sample had been compromised by the archeologically inappropriate inclusion of chained areas

in the sample. There was the further fact that the field teams had classed other areas as brushland even though it was later learned that these had been listed as grassland quads. The discrepancy would appear to involve the criteria used to classify the quads. The nature of this problem and suggestions for its resolution will be discussed in the final chapter.

Field teams carefully noted the wasteland category and recorded the extent of the acreage involved in each planning unit. This is given in the first part of Fig. 2a. The wasteland category is not included in the subsequent breakdowns of site locational data, however, because the entire 2,451 acres of wasteland was totally devoid of sites.

CHAPTER II, THE NATURAL SETTING

While the entire Moab District of the BLM lies within the Colorado Plateau, this paper is concerned with the four planning units identified as the Indian Creek/Dry Valley and Monticello unit (hereafter referred to as the Indian Creek planning unit), the Castle Valley, Dolores, and Beef Basin units. The locations of these tracts are plotted in Fig. 1 on the following page.

All four of the areas studied share common features based upon the general aridity of the region which varies somewhat with altitude. Common geological attributes also contribute to broadly similar patterns of surface configuration. At the same time, of course, regional distinctions are found. There is, for example, a general tendency for the elevation to fall from the higher areas along the Monticello latitude to much lower readings in the Moab area and north into the area of the Dolores River. While these elevational differences and certain elements of geological distinction foster differing frequencies of the plant species common to the project area, the basic list of floral resources remains substantially the same throughout the region.

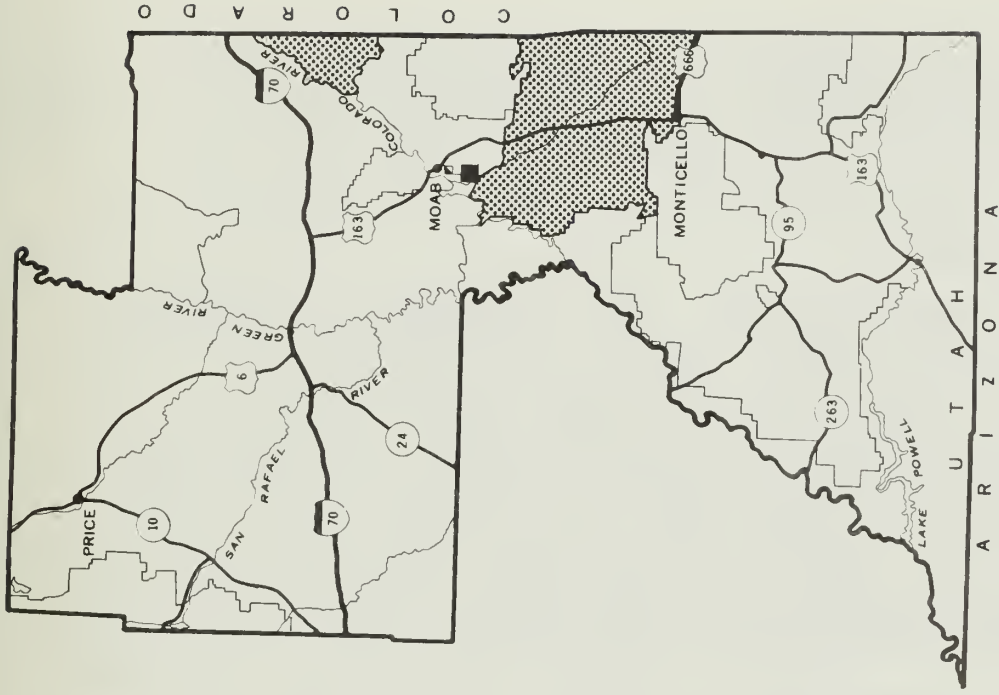
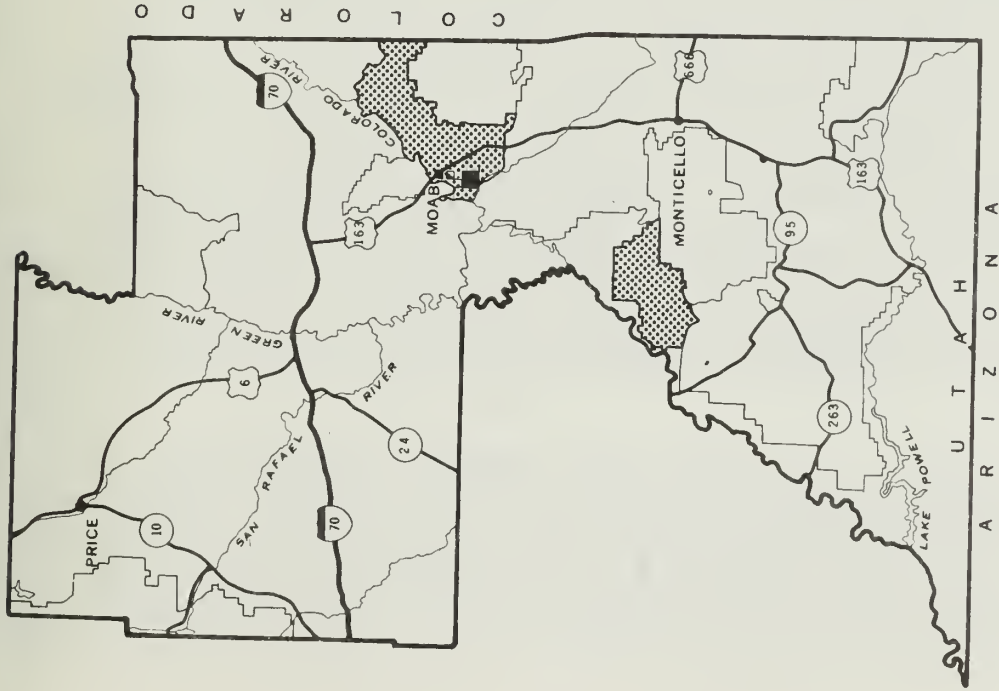
Geology of the Indian Creek, Beef Basin, Castle Valley, and Dolores Planning Units.

E. Blair Maxfield

Represented within the Indian Creek, Beef Basin, Castle Valley and Dolores planning units are many geologic formations and a wide range of rock types. This report first describes the various formations and the rock types represented in the project area. This overview is then followed by a description of the distribution of these features within the several planning units.

Permian System

Cutler Group. The Cutler Group is undifferentiated and displays relatively thin red beds that were deposited by streams on broad flood plains and on extensive tidal flats. Some arkosic eolian beds are to be found as are occasional strata containing numerous pelecypods. As one travels westward and southwestward, one is moving regionally and stratigraphically seaward in Permian time.



Moab District, Bureau of Land Management. Shaded areas denote Planning Units Sampled in the Canyonlands Range EIS Cultural Resource Inventory. Upper right: Dolores P.U.; Upper Left: Castle Valley P.U.; Lower Right: Indian Creek P.U.; Lower Left: Beef Basin P.U.

Fig. 1

The result is that more and more evidence emerges for the interpretation of truly marine environments within the Cutler strata. At the confluence of the Green and Colorado rivers, just west of the Indian Creek planning unit, most of the Cutler group is marine and may be differentiated into several distinctive formations.

Elephant Canyon Formation. The oldest sequence of Permian strata that may readily be segregated into a distinctive formation in the area of these planning units is the Elephant Canyon Formation. This formation is typically comprised of interbedded gray limestone, sandstone, and shale containing abundant marine fossils. The unit near its type section in the vicinity of the confluence of the Green and Colorado rivers is about 1,000 feet thick. The "Rico Formation", exposed in the Shafer Dome in the southwest corner of the Castle Valley planning unit, is recognized as the upper half of the Elephant Canyon Formation.

Cedar Mesa Sandstone. The Elephant Canyon Formation grades upward into and interfingers with the Cedar Mesa Sandstone. The most typical exposures of the Cedar Mesa are in the Beef Basin unit. This generally white, fine-grained, calcareous sandstone reaches thicknesses greater than 1,000 feet in Cataract Canyon. The Cedar Mesa is also typically highly cross-bedded. Numerous horizontal bedding planes bound more or less tabular sets of cross-stratification. The Cedar Mesa Sandstone was originally interpreted as an eolian deposit but the nature of the cross-stratification, supplemented by ripples and convolute bedding, strongly suggests a subaqueous origin. The fluctuating shoreline of the seaway that was involved lay a short distance north and east of the confluence of the Green and Colorado Rivers. The Cutler arkosic red beds from the east were deposited on tidal flats and deltas marginal to the Cedar Mesa area and interfingering of the two distinctive facies developed.

Organ Rock Shale. The Cedar Mesa Sandstone and its lateral equivalents are overlain by the Organ Rock Shale, a dark, reddish brown siltstone and mudstone formation. Like the other red beds in the Cutler Group, the Organ Rock is a fine-grained facies of the arkosic fluvial sediments that extend from their eastern source far to the west.

Triassic System.

The Triassic rocks form high vertical cliffs surrounding the western mesas of the Indian Creek planning unit. Triassic rocks throughout their extent in the Colorado Plateau area are eroded into spectacular cliffs and bewildering erosional features which create vistas of great scenic beauty.

Moenkopi Formation. The Moenkopi formation is the lower portion of this system and is usually found at the base of the cliffs in the area. It weathers to form red-brown ledges and slopes in wide outcrop belts on cliffs and in canyons. The Moenkopi formation rests unconformably on Permian rocks belonging, in most localities, to the variously named members of the Cutler Formation. The Moenkopi consists of slope-forming siltstone interbedded with resistant ledge-forming sandy siltstone and very fine-grained sandstone. The sandstone is very micaceous and well indurated, the grains being composed of quartz and feldspar and are generally well sorted and angular. The siltstone is grayish-red and reddish-brown, horizontally laminated and ripple laminated. The sandstone and sandy siltstone beds are red and reddish-brown, horizontally laminated, ripple laminated and cross-stratified.

Chinle Formation. The Chinle Formation is widely exposed. Regional studies show that this feature accumulated in a basin covering large parts of Utah, Arizona, and adjacent states to the east. All flora and fauna recovered from the Chinle is of continental origin. Many of the lenticular, poorly sorted sandstone beds were deposited in streams while the shale, mudstone, and siltstone which compose much of the Chinle accumulated in a floodplain environment. Many of the limestone beds in the formation probably represent deposition of lakes of limited extent. An extensive unconformity marks the base of the Chinle throughout the area. Where the Shinarump Member of the Chinle is present, relief on the unconformity is as much as 50 feet in channels cut into the upper surface of the Moenkopi Formation. In most of the other parts of the area where the Shinarump is absent, the unconformity is an obvious undulatory surface of erosion that shows only minor relief.

Wingate Sandstone. Overlying the Chinle Formation is the massive Wingate Sandstone. The thickness of the Wingate varies from 240 to 373 feet. It is reddish-brown to light tan but in some cases its weathered surfaces have been blackened by desert varnish. The sandstone is very fine to fine-grained and it is composed of well-sorted subround to round, clear and iron-stained quartz grains. Dark

accessary minerals are common. At occasional points, thin, dense, gray limestones form a very minor lithology. Large-scale crossbedding is a distinctive aspect of the Wingate Sandstone. Some crossbeds are 50 feet long and dip as much as 30 degrees. Throughout the area, bold cliffs are a characteristic feature of this formation. This is due partly to its uniform lithology and partly because it is protected by the overlying resistant Kayenta Formation. Also significant is the fact that the underlying soft Chinle Formation erodes rapidly and maintains a very steep slope while the Wingate cliff recedes by means of rock falls along great vertical joints.

Kayenta Formation. The Kayenta Formation consists largely of sandstone and minor amounts of interbedded siltstone and shale. Sandstone beds range from very fine to coarse grained and, at places, are conglomeratic. The conglomerate commonly consists of sandstone, clay, and sparse chert pebbles as much as one inch in diameter and dispersed in a sandstone matrix. The sandstone beds are as much as 35 feet thick, are lenticular and show parallel bedding on small-scale crossbedding. Sandstone beds are purple, red, white, tan, reddish-orange, and reddish-brown. Dark reddish-brown silty shale and siltstone form beds that generally are less than one foot thick but, in some places they may attain a thickness of as much as 15 feet.

Jurassic System

Navajo Sandstone. The Navajo Sandstone thins as it moves north-eastward. From a thickness of 634 feet in White Canyon, it is reduced to a thickness of 158 feet at a locality 12 miles northwest of Moab. The Navajo Sandstone in most of the planning units under consideration forms an extensive rolling, dissected surface distinguished by great rounded knolls or domes. The Navajo consists of grayish-orange and light gray, very fine to fine-grained sandstone. Thin lenticular limestone beds containing nodules and lenses of chert constitute a minor lithology. The Navajo Sandstone, of eolian origin, is typically cross-bedded on a large and intricate scale. The top of the Navajo is a significant hiatus that marks a break between the end of deposition of the Navajo and the beginning of deposition of the overlying Carmel Formation.

Carmel Formation. The Carmel Formation was deposited above an unconformity at the top of the Navajo Sandstone. The basal beds of the Carmel are generally composed of reworked sand from the Navajo which contain a layer of sparse to abundant chert pebbles at the base and disseminated chert granules within the body of the basal beds. The surface of the unconformity is remarkably smooth showing only minor irregularities which are probably the result of localized current action but generally less than a foot wide and a foot deep. The formation is predominantly reddish-brown siltstone and clay shale. To the northeast the formation becomes the moderate red earthy siltstone and light red sandstone of the Dewey Bridge Member of the Entrada Sandstone.

Entrada Sandstone. In east-central Utah the Entrada has been divided into three members. The lower Dewey Bridge Member of reddish-brown, sandy siltstone ranging from a few inches to 20 feet thick. The Slick Rock Member, generally 70 to 100 feet thick, is light brown or light buff, a light reddish-brown, pink or salmon colored, and is composed chiefly of very fine to fine-grained, moderately well sorted quartzose and somewhat feldspathic sandstone. The Moab Member attains its maximum development on Wilson and South Mesas southeast of Moab where the member forms the conspicuous white upper part of the Entrada. On Wilson and South Mesas the Moab Member is more than 90 feet thick. The Moab consists of mostly very well sorted quartzose, somewhat feldspathic, sandstone.

Summerville Formation. The Summerville is a regressive, marginal marine deposit accumulated on salt marshes and tidal flats. It is composed of thin, even-bedded red, gray, green, and brown sandy shale, siltstone, and mudstone at places containing masses of red and white chert along with limestone nodules. Minor gypsum beds and veinlets are also present.

Bluff Sandstone. The Bluff Sandstone is present above the Summerville Formation. It is a light-colored, predominantly crossbedded sandstone that attains a thickness of about 340 feet near the town of Bluff, but it interfingers with the Summerville formation to the north. The Bluff Sandstone has thus completely disappeared by the time the southern boundary of the project area has been reached.

Morrison Formation. The Morrison Formation lies with a light angular unconformity on the Summerville Formation and it consists of two members, the Salt Wash and the Brushy Basin.

The Salt Wash Member constitutes approximately the lower half of the Morrison in east central Utah. At the outcrop the member forms a steep, ragged slope consisting of cliff-forming sandstone ledges alternating with slope-forming mudstone units. A bench, supported by a relatively resistant sandstone unit, generally marks the approximate top of the member. The Salt Wash member ranges from 300 to 325 feet thick and it consists predominantly of interstratified sandstone and mudstone. The sandstone is grayish-yellow, very pale orange, and white. It is fine to medium-grained.

The Brush Basin Member forms the upper half of the Morrison Formation in east central Utah. It generally crops out as a relatively unbroken steep slope above the bench formed by the resistant upper part of the Salt Wash Member and below a cliff-forming sandstone of the overlying Burro Canyon Formation. Thicknesses range from 325 to 425 feet. The Brushy Basin Member consists of rocks considered typical of the Morrison Formation throughout much of the western interior of the United States. Variegated bentonitic mudstone is the dominant rock. It is usually banded red, purple, and gray although in limited areas, a greenish gray may dominate.

Cretaceous System.

Burro Canyon Formation. This feature consists of a basal light gray to light brown conglomerate or conglomeratic sandstone and an overlying red to green to gray mudstone. Each sandstone is made up of innumerable small lenslike bodies but the sandstone appears to be relatively massive and is widely traceable. Thinner lenses of sandstone are present in the mudstone in most places. Thin beds of limestone and chert are present in some areas but carbonaceous material is rare. In places the basal sandstone is absent whereas in other areas, two or more conglomerates or conglomeratic sandstones may occur in the unit. The thickness of the Burro Canyon Formation may vary widely throughout the Colorado Plateau but, it averages about 150 feet thick in the planning units. In most localities it is bounded above and below by an erosional surface although in a few places the mudstone interfingers with carbonaceous mudstones of the overlying Dakota (Naturita) Formation.

Dakota (Naturita) Formation. Overlying or interfingering with the Burro Canyon Formation is the Dakota Formation. In most localities the Dakota consists of three distinct lithologic units. An upper sandstone unit, a carbonaceous shale and impure coal unit, and a

lower, widely traceable conglomeratic sandstone unit. Sandstone and siltstone lenses may occur in the carbonaceous shale unit. Thicknesses range from 0 to 200 feet but an average is about 100 feet. In most places the Dakota rests unconformably on the Burro Canyon but in some places the two formations intertongue. It is disconformably overlain by the Mancos but also intertongues with it laterally.

Mancos Shale. The Mancos Shale consists of dark gray, well-bedded, silty shale and occasional tongues or lenses of sandstone and limestone. The total thickness of the Mancos shale may exceed 5,000 feet. In the area of the planning units, however, most of the Mancos Shale has been eroded off to such an extent that only a thin layer remains.

Holocene System

Quaternary. Many of the surfaces of the planning units subject to this study are covered with a relatively thin layer of quaternary terrace and pediment gravels and sands. Much of the gravel and sand deposits are wind blown and some show true dune structures. Much is also spread out in thin sheets.

The Environmental Setting of the Indian Creek, Castle Valley Dolores and Beef Basin Planning Units

Indian Creek Planning Unit

Formations of the Cretaceous system and of Quaternary gravels and sands cover most of the surface of the southeastern portion of the Indian Creek planning unit. Quaternary Terrace and Pediment gravels combine with abundant isolated outcrops of Mancos Shale to occupy much of the extreme southeast corner of this unit. These rock elements are found in most of T34 and 33S and the southern half of T32S, R23, 24, 25 and 26E.

The Burro Canyon and Dakota Formations occupy most of the northern half of T32S, R23-26E. These formations generally form a series of small cliffs along the northern edge of the Great Sage Plains giving rise to the vistas that can be seen from the northern edges of Peter Point, South Canyon Point, Iron Canyon Point, West Summit, and Summit Point. There are also some isolated outcrops in T33 and 32S, R24E.



Indian Creek Planning Unit. Site 42Sa5928. Lithic scatter in middle foreground. Facing north. Hatch Wash in background and La Sal Mtns. on horizon.



Indian Creek Planning Unit. Site 42Sa5940. General view of quarry area along ledges at center. Facing northeast. Cliffs of Windwhistle Rock in background.

The areas of Hart Point, Hatch Point, and Rone Bailey Mesa in the central portion of the planning unit are occupied by the Jurassic Formations including Navajo Sandstone, Carmel Formation, and Entrada Sandstone. Surrounding the above points and mesas are Triassic formations that form the spectacular cliffs of the area. The lower portion of the cliffs is usually occupied by the Moenkopi Formation overlain by the Chinle and the massive cliff-forming Wingate and Kayenta Formations.

Along the western portion of the Indian Creek planning unit is an extensive esplanade capped by the Cutler Formation undifferentiated in the northwestern portion, and the Cedar Mesa Sandstone Member of the Cutler in the southwestern portion of the unit. In the northeastern corner, the Elephant Canyon Formation ("Rico" Formation) is exposed in the Shafer Dome and along the deeper gorges of the Colorado River. There is also an extensive outcrop of Pennsylvanian age Hermosa Formation, consisting of richly fossiliferous limestone, dolomite, and shale in the Lisbon Valley Anticline in T30S, R25E.

Of the wildlife known in the planning unit today (Indian Creek URA, 1976), only the deer and the rabbit seem likely to have provided significant food resources for prehistoric man. Petroglyphs in the project area also argue the importance of bighorn sheep. Some game birds may have been taken and a local informant whose name has been lost speculates that fish may once have been important. It should be noted, however, that Indian Creek, the largest drainage in the unit, is not now a perennial stream. Some informants believe that it may have flowed throughout the year prior to the advent of the European. Should this prove to have been the case, some fish could have been utilized but their dietary contribution would have been limited.

The major ecozones in the unit have been defined and summaries of their major components listed. (Indian Creek URA, 1976). Thus the juniper-pinon zone has a major overstory of pinon pine and the Utah juniper while the understory consists largely of service berry, cliff rose, and ephedra. This association is most common to the steeper slopes with shallow, rocky soil and higher elevations.

The sage brush zone is dominated by an overstory of big sage and four-wing saltbush. The understory commonly includes Indian ricegrass, squirrel tail, blue gramma, curly grass and sand drop seed.

The desert shrub ecozone may be subdivided into five distinct associations with different shrubs as the dominant species in each but with much overlapping of the understory components. The shadscale association

also includes curly grass, sand drop seed, Indian ricegrass, blue gramma, snakeweed, ephedra, and erigonum. The four-wing saltbush group includes big sage, rabbit brush, winterfat, snakeweed, ephedra, three awn, blue grama, squirrel tail, curly grass, sand drop seed, and Indian ricegrass.

An association classed as, "Other Desert Shrubs," yields a grouping similar to that found in the four-wing saltbush zone but the number of related species is greater. The most prominent of these are four-wing saltbush, curly grass, Indian ricegrass, snakeweed, cacti, shadscale, old man sage brush, yucca, and rabbit brush. A group dominated by blackbrush includes curly grass, Indian ricegrass, ephedra, and cacti. A final category termed, "Other Half Shrubs," includes copperweed, Indian ricegrass, curly grass, rabbit brush, four-wing saltbush, snakeweed, and cacti.

No definition of the barren waste category is given although it is evident that the reference is to areas substantially devoid of vegetation. Louthan (personal communication) asserts that the category is defined as areas having less than 2% vegetation cover. The most common examples of such conditions are to be found in areas of substantial slickrock exposure or in places subjected to such regular flooding that few plants are able to take root.

Castle Valley Planning Unit

Cutting along the southwestern border of the Castle Valley planning unit, Cane Springs Canyon has cut deep enough to expose the Cutler Formation undifferentiated and has cut into the top of the Elephant Canyon ("Rico") Formation. From Cane Spring Canyon northeastward to about midway in the unit at a point where the Porcupine Rim runs across, the area is floored by Jurassic and Triassic age rocks. Where washes have cut deeper, the Triassic Wingate Formation is exposed while on the higher erosional remnants it is the Jurassic Entrada Sandstone that is exposed. The Navajo Sandstone is the most widely exposed formation in this central portion of the planning unit.

Porcupine Rim is an abrupt escarpment along the southwest side of Castle Valley. The mesa is held up by the resistant Kayenta Formation similar to the mesas in the Indian Creek unit. In the face of the escarpment is exposed the Wingate Formation which forms massive cliffs underlain by the Chinle Formation. The Chinle forms a small and rather steep slope with the ledge-forming Moenkopi Formation directly beneath it. The main portion of the valley is floored by the arkosic Cutler Formation undifferentiated. Round Mountain in the southeast part of the Valley is a Tertiary



Castle Valley Planning Unit. Site 42Sa6064. Chipping area in foreground. Facing east. La Sal Mtns. in the background.



Castle Valley Planning Unit. Site 42Gr703. Rock-shelter habitation. Facing west. Pace Ranch is visible on floor of Castle Valley in background.

porphyritic intrusive surrounded by the Moenkopi Formation. Castle Rock and Parriott Mesa are erosional remnants capped by the resistant Kayenta Formation. Along the west and northwest sides of the valley are a series of prominent finger-like mesas protruding out into the valley. On their leading edges they are capped by the resistant Kayenta Formation while they gradually add formations further back until, at the northern border of the planning unit, the capping is the Cretaceous Burro Canyon Formation.

While portions of this area provide only marginal habitat for deer at any time of the year, much of the planning unit affords good quality winter range for these animals (Castle Valley URA, 1972) and it is likely that the area served as a winter source of game for prehistoric inhabitants. Elk and bear are reported occasionally but they appear to enter the unit from nearby areas. It is entirely possible, of course, that their numbers were once somewhat larger. Big horn sheep were last seen along the Colorado about 25 years ago but these animals were doubtless of some dietary significance in the precontact period.

The wild turkey has recently been introduced into the unit. The success that these birds have had in moving into a number of environmental niches suggests the possibility that they may once have been native to the area. Should archeological evidence demonstrate that this was the case, they may have been a source of food along with the plentiful mourning doves and the cyclical rabbit populations.

In the distinctive habitat provided by the Colorado and Dolores Rivers, waterfowl are abundant during the winter months while fish may have played some role in the diet of pre-Columbia inhabitants. The extent of such use must await archeological verification, however.

Although various agency papers differ in the acreage accorded to each of the major ecozones within the planning unit (cf. Castle Valley URA, 1968 and Cultural Resource Sample Design, 1977), this would appear to represent the revisions inherent in an ongoing reassessment of the unit's resources. The basic composition of each of the major zones remains well-defined, however. These associations are essentially the same as those noted in the Indian Creek planning unit.

The juniper-pinon zone may be subdivided into three constituent elements (URA, 1968). The first is a scrub juniper category common to lower elevations. This is frequently a zone transitional between the desert shrub association and the true juniper-pinon type. The more typical or "true" juniper-pinon zone occurs at somewhat higher elevations than does

the scrub form and the latter utilizes generally better soils. In the third category, the forest contains a higher percentage of pinon. This feature is found at even higher elevations under conditions of still better soils and somewhat more annual moisture. In some instances this subzone is a part of the juniper-pinon-ponderosa transition or ecotone.

The grasslands occur in deep, well-drained soils that are most commonly found on mesa tops. The dominant species is blue grama found in frequent association with galleta and sagebrush. Blue grama is poor in forage productivity but is valuable for erosional control because of the stabilizing action of its root systems.

Sagebrush areas form the most limited association within the unit. They are most common to mesa tops where they appear as "parks" ringed by apparently invading juniper and pinon. Associated plants include cheat grass, galleta, blue grama, and wheat grasses.

Dolores Planning Unit

The Dolores planning unit is on the western nose of the Uncompahgre Uplift. The younger rock units are along the western edge of the unit while older rock elements are found in the east-central portion.

The Cretaceous Dakota and Burro Canyon Formations are exposed in the southwest corner of the unit where they cap Hotel and Scharf Mesas. The Jurassic Saltwash Member of the Morrison Formation caps Steamboat Mesa and extends in the northwestern direction along the northeast face of Scharf and Hotel Mesas. The other Jurassic formations, Summerville, Entrada, and Navajo, along with the Triassic Formations, Kayenta, Wingate, and Chinle, make an arc around the nose of the Uncompahgre Uplift in T22S, R26E. The Chinle Formation rests unconformably upon the eroded Pre-Cambrian rocks of the Uncompahgre. The Pre-Cambrian core of the Uncompahgre Uplift is exposed in T22S, R26E and in the eastern portion of T22S, R25E. There are also outcrops of Pre-Cambrian rocks along a fault block running east and west in the southern part of T21S, R25E. This also occurs along the Colorado River and in various washes running into the Colorado from the east in T20 and 21S, R25 and 26E.

The faunal resources of the unit (Dolores URA, 1973) are substantially the same as those of the Castle Valley unit. The deer in the area winter in the Dolores planning unit and spend the summer on higher ground in Colorado. At the present time there is some over-population of deer. The condition grows out of difficulties in coordinating management practices on privately owned Colorado lands and publicly owned land in Utah. Such a problem



Dolores Planning Unit. Site 42Gr707. Lithic scatter and quarry area in foreground. Facing north.



Dolores Planning Unit. Site 42Gr708. Chipping station in foreground. Facing southwest. Colorado River at base of slopes in background.

would not exist in pre-Columbian times, of course, and it is likely that the Dolores area was also winter hunting ground.

Bear and elk are occasionally seen in the Dolores planning unit but they appear to be intruders from other areas. Prior to the advent of the European they probably occurred in numbers sufficient to be of some dietary significance. While there would appear to be fewer game birds in the Dolores unit than in Castle Valley, the Colorado and Dolores Rivers remain potential sources both of waterfowl and of fish. One limitation should be noted, however. Much of the Dolores River freezes over during the winter thus disrupting a part of their annual cycle.

In the description of the major plant communities of the Dolores planning unit (Dolores URA, 1973), no discussion of grasslands is offered. The remaining associations are, meanwhile, similar to those identified in the other units.

The juniper-pinon forests concentrate in the higher areas of the unit as well as on the steeper slopes. The understory for most of the forested region is Indian ricegrass and needle-and-thread grass. Some blackbrush occurs as the understory at the lowest elevations reached by the pygmy forest.

The desert shrub association is dominated by blackbrush with a scattering of saltbush which becomes more common around the confluence of the Dolores and Colorado Rivers.

Sage brush flats are located on the higher and more northerly parts of the planning unit. The understory is needle-and-thread grass, Indian ricegrass, curly grass, and some annuals.

The balance of the unit is covered with land classed as barren waste. Although none of the URAs define this category, this paper has previously noted that this is generally regarded as a zone with less than 2% vegetation cover.

Beef Basin Planning Unit

The Beef Basin Planning Unit is floored by the Cedar Mesa Sandstone except in the deeper canyons such as Dark Canyon, Gypsum Canyon, and their tributaries. These canyons have cut deeply enough to expose the Elephant Canyon ("Rico") Formation.



Beef Basin Planning Unit. Site 42Sa6087. Ceramic scatter in foreground. Facing east. Lavendar Mesa on horizon.



Beef Basin Planning Unit. Site 42Sa6117. Lithic scatter on broad bench. Facing southwest.



Beef Basin Planning Unit. Site 42Sa6100. Masonry wall built to create storage unit in rockshelter. Facing west northwest.



Beef Basin Planning Unit. Site 42Sa6067. One of five granaries built in rockshelters at this site. Facing north.

The Cedar Mesa Sandstone is generally a well-sorted sandstone with good permeability and porosity and therefore a good aquifer throughout most of the Planning Unit. Interbedded with the sandstone are thin, discontinuous shale layers that act as permeability barriers. The Cedar Mesa Sandstone overlies the Elephant Canyon Formation which is also a rather impermeable unit. Because of these relationships numerous small springs and seeps issue from the Cedar Mesa Sandstone in the deeper canyons which have cut into the sandstone deep enough to expose the interbedded shale layers and the underlying contact with the Elephant Canyon Formation.

Appreciable amounts of Quaternary alluvial cover occur only in the north central part of T33S, R16E and scattered discontinuously throughout T32S, R18 and 19E in the Beef Basin Planning Unit.

The wildlife that may have been hunted and utilized by prehistoric man in the Beef Basin unit persists to the present day. Significant food resources would have included deer, rabbits and probably bighorn sheep, although both elk and bear continue to be reported and should have had at least some nutritional importance prior to the arrival of the European. A URA on Beef Basin wildlife is not available but local informants report that the region continues to support an abundant deer population which is much sought after by hunters.

In the examination of the plant communities involved in the unit, it is evident that associations similar to those noted in the Indian Creek planning unit persist in the Beef Basin unit. The juniper-pinon combination occurs here, as elsewhere, on the high plateaus and on the rough slopes at higher elevations. The pygmy forest in the Beef Basin unit has, for the most part, only a most limited understory. This may be due to the greater competitive success of the trees in the absorption of moisture. Much of the forest cover on the plateaus has been chained during the course of range improvement projects. BLM personnel indicate that slightly more than 12,000 acres had been chained by 1967 and they state that much more has been chained since that time although precise figures are not available.

The desert shrub association found in the Beef Basin unit includes shadscale, black brush, ephedra, along with some curly grass and Indian ricegrass. The sage brush lands in the unit generally have a dense understory of grass. This may relate to the fact that the sage brush appears to have been subjected to serious overgrazing although it is not clear whether this is attributable to game or to livestock. The barren waste area occupies a significant part of the broken terrain in the unit and it is made up of areas of slickrock exposures, sheer cliffs, and some of the canyon bottoms of the Dark Canyon Plateau.

CHAPTER III. NARRATIVE DESCRIPTIONS: QUADRANTS AND SITES.

On the pages that follow, brief descriptions of each quadrant summarize the nature of the covering vegetation and the principle physiographic features within the quarter section. The descriptions are accompanied by diagrammatic representations of the sample unit upon which the position of each site is marked.

Site function is indicated in each diagram by a series of code letters which are appended to the site numbers when they are appropriate. The letters used in this paper include: CH=chipping; CA=camp; CE=ceramic; HB=habitation; ST=storage; RS=rockshelter; RA=rock art.

Cultural affiliation and approximate temporal position are indicated, when suggested by the data, by the traditional Pecos Classification notations: BM-II, BM-III, P-I, P-II, and P-III. The term "Pueblo" is used to denote a site that has an apparent Anasazi affiliation although the data does not afford a precise indicator of the age period. The designation "ARCH," indicates a late archaic site while "Paiute," is a reference to cultural diagnostics of either Southern Paiute or Southern Ute. Diagrams have, of course, been omitted in the cases of quadrants in which no sites were found.

As indicated briefly in the opening statements of this paper, the sample design (BLM Cultural Resource Sample Design, 1977) was established initially by imposing a one half mile grid on existing vegetation maps. In each of the major ecozones thus gridded, numbers were assigned to each half mile quadrant and selection of the sample units was made with the aid of a computerized table of random numbers. The initial design was flexible in the sense that it projected a 10% sample of each ecozone but it was set up in 10 increments of 1% each. The final decision called for an initial sample of only 1% and it is on this basis that this cultural resource inventory has been conducted.

Indian Creek Planning Unit

The Indian Creek planning unit (which includes the Dry Creek and Monticello units) contains a total of 509,118 acres (Cultural Resource Sample Design, 1977). The 32 sample quadrants apportioned to this unit total 5,120 acres or an almost even 1% of the total. The 224,886 acres of juniper-pinon were sampled in 14 quads with a combined area of 2,240 acres. Four quadrants provided a 640 acre sample of just over 1% of the total of 55,769 acres listed as grasslands while three sample units with a

total of 480 acres in sage brush provided a sample slightly under 1% for the 50,009 acres in this category. The 148,458 acres in Desert Shrub vegetation were sampled in 9 quads totalling 1,440 acres or slightly under 1%. Finally, two sample units with an acreage total of 320 produced a 1% sample of the 29,996 acres classified as Barren Waste.

Beef Basin Planning Unit

The Beef Basin Cultural Resource Sample Design (1977), reports that this planning unit includes a total of 145,124 acres. Of this amount, 90,984 acres are listed as juniper-pinon which accounts for 62.7% of the total area. Five quarter section sample units combined to form an 800 acre or .88% sample of the zone. The 8,629 acres designated grass land covers 5.9% of the unit. Here a single 160 acre sample unit produced a 1.8% sample. A total of 8,120 acres are listed as sage brush lands with a single quarter providing a 1.9% sample. Some 14% of the planning unit, 20,246 acres, has been classified as Desert Shrub land for which a 1.58% sample was obtained through a survey of two quadrants. A 160 acre quadrant of Barren Waste supplied a .9% sample of the 17,144 acres in this category which accounts for 11.8% of the Beef Basin Planning unit.

Castle Valley Planning Unit

Although there is a total of 208,882 acres of land in the Castle Valley planning unit, the Cultural Resource Sample Design (1977) was applied to only 149,941 BLM-managed acres. Within this limit, the juniper-pinon zone covers 97,400 acres of about 65% of the total. A generous 1.5% sample was provided in the assignment of 9 sampling units with a total of 1,440 acres.

Grasslands comprise only 2,251 acres in the area or about 1.5% of the total, and no quadrant was assigned. The 10,470 acres listed as sage brush account for 7% of the acreage and the requisite 1.5% sample was provided by a single 160 acre quadrant.

The desert shrub associations are reported as involving 11,120 acres or about 7.5% of the total. A single quadrant approximated the requisite 1% sample of the zone. Barren waste, meanwhile, was calculated as claiming 19% of the unit with 28,700 acres. A one percent sample of this zone was produced in the 480 acres of three quadrants.

Dolores Planning Unit

A total of 101,890 acres are included within the Dolores planning unit and a 1% sample of this land was obtained with seven 160 acre quadrants totalling 1,120 acres. Beyond this, however, it should be noted that the breakdown of these quads according to ecozone provides an illustration of some of the problems which arise in the use of small sampling percentages in areas of very limited acreage.

The juniper-pinon association covers 39.4% of the unit with a total of 40,210 acres. Two quadrants totalling 320 acres produce a sample of just under 0.8%. In contrast to this, the 4,800 acres in grass account for only 4.7% of the area and a single 160 acre sample unit covers 3% of the area. Similarly, 4,760 acres in sage brush to which a single quadrant was assigned, produced a similar 3% sample.

The desert shrub group accounts for 44,890 acres or 44.1% of the unit but the 320 acre sample of two quadrants produces a sample of 0.71%. A single 160 acre sample unit accounts for 2% of the 7,230 acres (7.1% of the total) of the planning unit that has been classified as barren waste.

A communications oversight resulted in a situation in which field work and the preparation of a preliminary draft of this report were done without knowledge of the ecozone classifications assigned to each quadrant by the BLM. While this circumstance has occasioned some added difficulties in subsequent revisions of the report, the view expressed here is that the advantages that result outweigh the difficulties involved. Field workers reached their own conclusions in describing each quadrant and have made their own assessments concerning the areas covered by different ecozones. Inevitably there will be discrepancies between the calculations made in the field and those of the sampling design but these will serve to highlight potential pitfalls in future sampling programs and they may be used to improve sensitivity in future projects.

A discussion of the implications of the more detailed analysis of quadrant ecosystems will be postponed to a later point in the report. Here, however, it should be noted that the BLM classification of each quadrant has been added in capital letters at the conclusion of the narrative description of each quadrant.

This project has not used the most widely known BLM site report form but has, instead, made use of an experimental form developed by BLM personnel in Utah. This form is designed to facilitate the organization of data for quantification by computer or by other means. While such an

approach is essential if trends in large bodies of data are to be discerned, it does not remove the necessity for narrative descriptions.

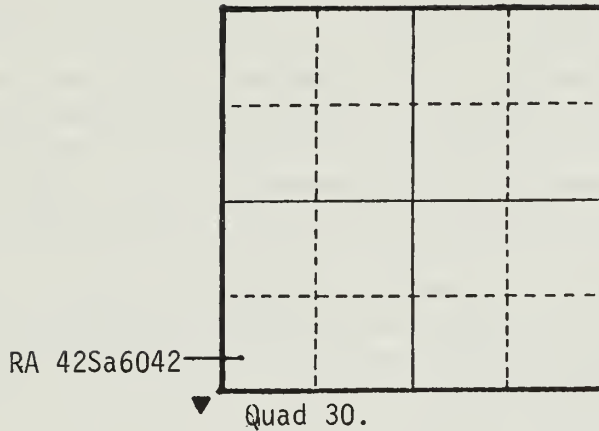
The site forms contain space for comments. In the field this area is used primarily to record any information that does not fit within the categories of the main portion of the sheet. In reworking the site reports after the field work has been completed, however, this space is used to write a narrative description of the site. This statement attempts to include all of the quantifiable data contained on the form. The narrative site descriptions which follow the quadrant descriptions in this chapter are taken directly from the site sheets filled out during the project.

Also relevant to the base line data of this chapter are tabulated summaries of site data and reproductions of the CRES forms used to evaluate the potential of each site. Both are included in the appendix to this report.

INDIAN CREEK PLANNING UNIT

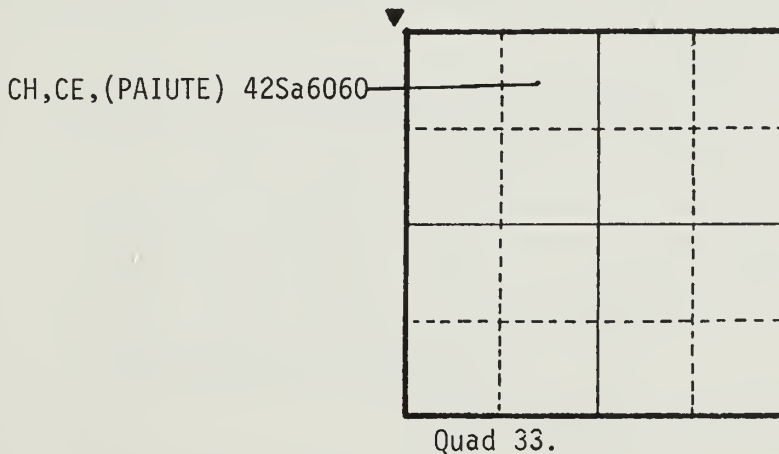
Quad 11. (Sec. 18 SE 1/4, T27S, R21E) The quadrant divides distinctly into two contrasting ecological zones. The red sands of the Colorado River bottoms support a widely spaced sage brush overstory which encompasses about 65% of the quarter section. The remaining 35% has been classed as wasteland, encompassing, as it does, the red sandstone cliffs that rise above the river bottom land. Neither sites nor random artifacts were found. (No corner marker was found. Location was established by triangulation on topographical features clearly identified on maps.) DESERT SHRUB.

Quad 30. (Sec. 15 SW 1/4, T31S, R21E) Part of the quadrant embraces the north end of Bridger Jack Mesa which lies just to the west of the locally prominent Dugout Ranch. Three different areas can be distinguished here. The first is a comparatively level bench region covered with shallow soil, some sand dunes and occasional slick rock exposure. Vegetation includes a few stunted juniper, small sage brush, some cacti, and grasses. A single petroglyph site was found in this zone which accounts for some 45% of the quad. --- Approximately 6% of the quarter section is taken over by cliff faces and talus slopes. The juniper are a bit larger here, but widely separated. Some brush and grasses also occur. No sites were found in this zone. --- The mesa top proper has some dune areas and patches of slick rock but it is basically a moderately dense juniper-pinon overstory. The understory of this 40% segment includes bitter brush, cacti, ephedra, cheat and other grasses. No sites in this zone. (Quarter section marker was located at the base of a cliff.) BARREN WASTE.



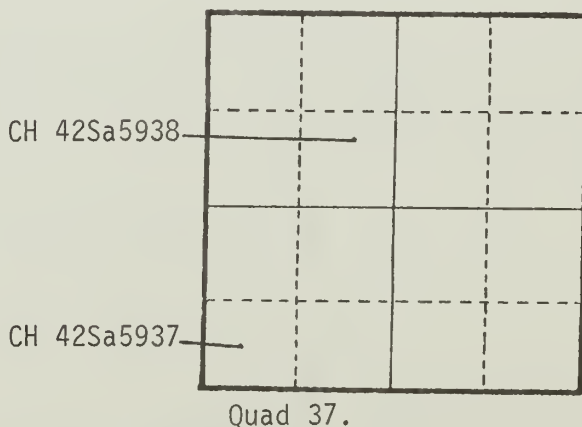
42 Sa 6042 Elev. 1609 m (5280 ft.) A small petroglyph panel on a vertical surface at the base of a ledge which faces east overlooking rolling brushland dominated by ephedra, yucca and sage brush with some juniper. The snake design is too limited to be associated with any culture although team members suggested that the panel may be associated with 42 Sa 6041 which would argue early Anasazi.

Quad 33. (Sec. 26 NE 1/4, T27S, R20E) A sage brush overstory on red sand flats covering about 32% of the quadrant contrasts sharply with the 68% of the area dominated by sandstone cliffs. A single large but heavily eroded chipping site was recorded in the brushland. (Quarter section marker located.) DESERT SHRUB.



42 Sa 6060 Elev. 1243 meters (4080 ft.) The chipping station faces northeast with a slope of no more than 2°. The area measures 75 meters north-south and 150 meters east-west, extending along the base of a cliff with some erosion flowing to the northeast. The site has a clear view of the flood plain of the Colorado River. Grazing apparently has intensified erosion. Sage brush and saltbush form the overstory in the absence of trees. Gray chert primary and secondary flakes displayed a concentration of only about 2 per square meter. Although a single sherd was found, it appears to be of Paiute origin--a fact which suggests site utilization any time between the mid 1300's and the early historic period.

Quad 37. (Sec. 6 SW 1/4, T28S, R21E) Two ecozones occur in this quadrant. A juniper-pinon overstory dominates a relatively flat area encompassing about 80% of the total area. Sandstone outcrops and areas of blown sand are also found in this flat. Two small lithic manufacturing sites and an isolated artifact were found in sandy areas in the juniper-pinon. Less than two meters square in each instance, the sites appear to have been the product of very brief use. -- The second zone, about 20% of the area, is broken wasteland created by the head of a canyon which indents the northern part of the unit. No sites were found in this area. --- (No corner marker was found. It appears to have been destroyed during work on a seismic road which runs down the section line. Location plotted from topographical features with the aid of aerial photos. Two extra sweeps at right angles to the seismic road were added to insure coverage of the quadrant.) JUNIPER-PINON.

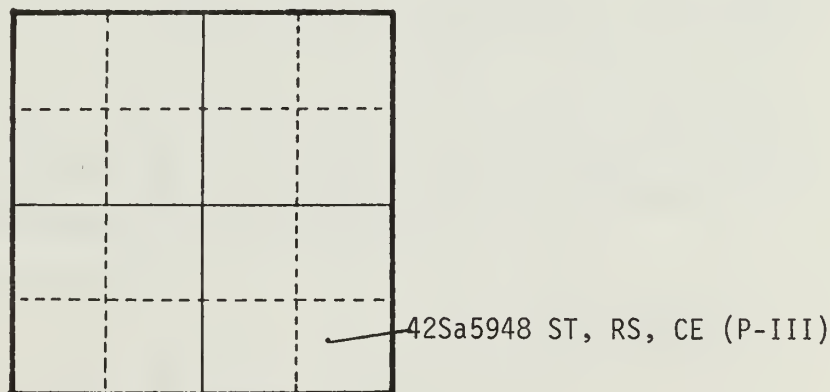


42 Sa 5937 Elev. 1787m (5860 ft.) The site, a small chipping station, is located at the edge of a juniper-pinon clearing. It is concentrated in a six by six meter area with few associated tools. Water is one km north of the site. Main vegetation is juniper-pinon, sage brush, ephedra and grease wood. The entire site appears to have been used only once or twice. Secondary flakes and blade forms all of white chert were the only lithics observed. Culture-period is indeterminate.

42 Sa 5938 Elev. 1792m (5880 ft.) The site is a small chipping area facing northeast at 40°. It lies on an open flat between two drainages. The site was probably utilized only once, as only six secondary flakes were found. The nearest water is 0.7 km to the north. Main vegetation is juniper-pinon, sage brush, rabbit brush, and oak brush. All flakes were of white chert. Cultural affiliation is indeterminate.

Quad 42. (Sec. 14 NE 1/4, T29S, R21E) Sagebrush flats cover this unit. Heavily grazed by sheep, the area varies less than 20 feet in elevation in any part of the section. A rock road some eight miles in length, cuts the middle of the quadrant from east to west. No sites were recorded. (Two markers were located.) SAGE BRUSH.

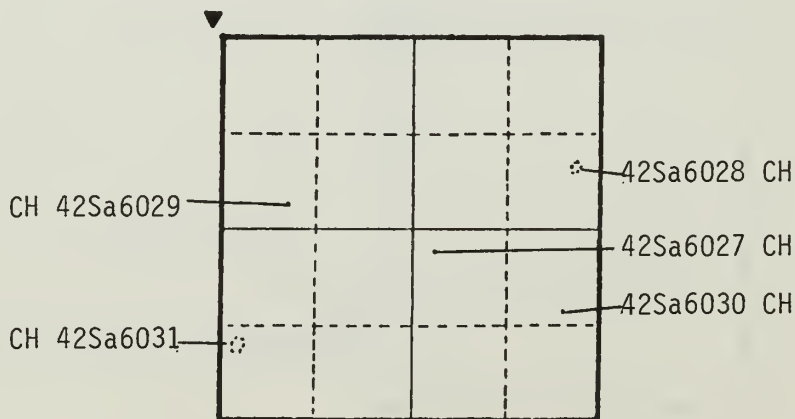
Quad 53. (Sec. 30 SE 1/4, T32S, R21E) A thick juniper-pinon stand on top of Bridger Jack Mesa dominates this quadrant by covering 60% of the area. The pygmy forest also includes some small sage brush flats. One site, a small granary with associated ceramics, was located on forested flat lands area. The remaining 40% of the area is wasteland consisting of cliffs and steep talus slopes below Bridger Jack Mesa. No sites were found in this zone. (No corner markers were found. Topographical features on Bridger Jack Mesa were used to triangulate the position.) BARREN WASTE.



Quad 53.

42 Sa 5948 Elev. 1926m (6320 ft.) This apparent storage unit or granary is located in a site area of 15 meters north-south and 10 meters east-west. The granary itself is about two meters square and sits under an overhang at the base of a small cliff. Rough-shaped slabs with little chinking were used in the construction. The site terrain is broken and slope below the granary is 7°. Soils are residual. Below the site to the south is a wash. Above the site and to the north is a series of terraces and small cliffs which rise to a flat area. The site has been vandalized (part of the walls torn down) and some erosion has occurred. Other than this, the site is in fair condition. It is located in a juniper-pinon woodland with small amounts of sage brush, salt brush, and ephedra also present. No lithic artifacts were noted, but a good sample of ceramics were found, including sherds of Mesa Verde B/W (1200-1300) and a possible Mesa Verde Corr. sherd (1100-1300). Following the lead of this small collection, the site should be considered to have been used between 1200 and 1300 A. D. and to fall within the Pueblo III range.

Quad 72. (Sec. 30 NW 1/4, T29S, R25E) The vegetation of the unit is uniform but there are two distinct topographical zones. The largest area extending along the gently rolling ridge line is sage-dominated. Occasional juniper, several types of grasses, and cacti were also noted. Minor arroyos cut away some of the ridge and erosion has removed top soil exposing a sandstone bedrock. Exposed quartzite and a few sources of chert were seen in this region. Four sites were found in this area. --- The second zone is dominated by a wash or major arroyo in the north-eastern part of the unit which drains to the north. The deeper soils and a slightly higher available moisture have produced rabbit brush and sage brush which is a bit taller than that found in the other area. Exposed chert and quartzite are also present. Some grasses such as blue gramma are to be found. One site occurred in this region. There is sign of deer and rodent activity over the entire quadrant. (Corner marker was located.) GRASS.



Quad 72.

42 Sa 6027 Elev. 2005m (6580 ft.) This small lithic site covers six square meters on a slope looking east at 95° . The soil is a sandy clay now eroding badly due to chaining disturbance. The former juniper-pinon forest has been seeded in crested wheat. Tools include a square base knife and a knife tip. The remainder of the site is a few flakes of chert. Cultural affiliation of this site could not be assigned.

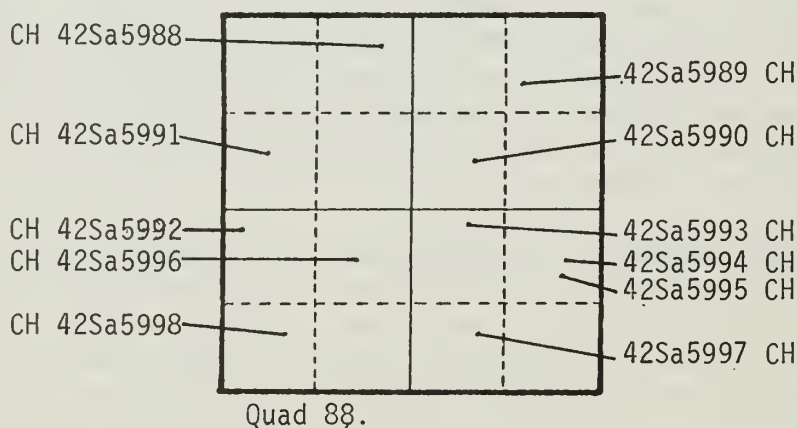
42 Sa 6028 Elev. 1993m (6540 ft.) Site area is 150 meters east-west and 200 meters north-south. The lithic scatter is located on the north side of a knoll and faces northwest at 310° . Shallow soil has eroded exposing a slick rock base in several areas. While the site contains only a few clumps of snake weed, the perimeter of the site has a light overstory of juniper-pinon. Only primary chert flakes were observed at the site. A lack of diagnostic artifacts rendered cultural determination impossible.

42 Sa 6029 Elev. 2002m (6570 ft.) A lithic scatter occupies an area nearly 200 meters square on top of a knoll. The general aspect is east at 90° with a slope which varies from 1 to 6° . Soils on the knoll top are sandy and are eroding down the north side. Considerable rock material occurs in this sand. The heaviest concentration of material is on the knoll top, although flakes were noted on the north slope. The knoll is covered with a light juniper-pinon overstory with sage, cacti and snake weed also present. While there is considerable detritus, no culturally diagnostic tools were located.

42 Sa 6030 Elev. 2004m (6575 ft.) The site follows a ridge line around the head of an arroyo and covers an area of 200 meters north-south by 300 meters east-west. The large lithic scatter is on sandy soil with several minor arroyos washing into the main arroyo which lies to the east at 70° . These wash areas have concentrations of secondary cultural deposits. The site is in moderately dense juniper-pinon cover with various grasses in clear areas while snake weed, ephedra, and yucca occur in less disturbed locations. Even though the detritus was heavy, no tools of diagnostic value were recovered.

42 Sa 6031 Elev. 2023m (6640 ft.) A lithic scatter curves along a ridge line and slope extending 160 meters east-west and 75 meters north-south. The soil is rocky and erosion has caused some secondary cultural deposition. The site generally looks north at 10°. The area has juniper-pinon cover while snake weed, yucca, cacti and sage also occur. Secondary chert flakes dominate the lithic inventory while two knife fragments were collected. The tools collected were not diagnostic so no cultural affiliation has been determined.

Quad 88. (Sec. 35 NW 1/4, T29S, R24E) At one time the quad was a fairly homogeneous unit with a heavy juniper-pinon overstory. At present, however, with the exception of small, steep, and rocky areas, nearly all of the quarter section has been chained. In only one limited area, amounting to about 10% of the total, did it appear that brushland had dominated before chaining. --- Two major arroyos, running towards the south-east, cut through the area and these are fed by numerous tributary gullies. The thin top soil has eroded in some places to expose sandstone and limestone bedrock. Two sites, associated with lithic sources, were found in bedrock areas. (No corner markers were found.) The quad was located by a check on intersecting fence lines and verification with the map that they ran on section lines.) GRASS.



42 Sa 5988 Elev. 2133m (7000 ft.) The lithic scatter now covers an area of 10 meters east-west by 40 meters north-south. It occupies a ridge of sandy soil between minor arroyos. The site is badly eroded at the southern end and the entire area has been chained. Formerly a juniper-pinon forest, it is now seeded with crested wheat grass. Artifact remains consist mainly of primary chert flakes with no diagnostic tools for further cultural identification.

42 Sa 5989 Elev. 2121m (6960 ft.) The lithic area covers a 15 meter square on badly eroded sand and faces northwest at 300°. The site occupies a ridge between arroyos in what was once a heavy juniper-pinon forest, but which has been since chained. The area is now seeded with crested wheat grass and has some sage growth. No diagnostic tools were recovered.

42 Sa 5990 Elev. 2130m (6990 ft.) The lithic site occupies an area of 10 meters square in a rock-strewn sandy surface of a rocky sand on a ridge top that slopes down to the south. The site was in a juniper-pinon forest which has been chained. Now crested wheat grass is present along with sage and cacti. Two tools, a scraper and a knife fragment were recovered, but nothing culturally diagnostic.

42 Sa 5991 Elev. 2127m (6980 ft.) A small lithic scatter occupies a six meter square on the south bank of an arroyo. The site is on badly eroded sandy soil which has been chained. The former juniper-pinon forest area is now dominated by crested wheat grass, cacti, and sage. Cultural material consists of primary and secondary white chert flakes, but no diagnostic tools were recovered.

42 Sa 5992 Elev. 2103m (6900 ft.) A lithic scatter, or possible hunting site, covers an area 20 meters square on the north slope of a rocky arroyo. The site faces south at 170° with a 3° slope. Some erosion of the sand around the rock has occurred, scattering the cultural remains. Juniper-pinon form the overstory, with snake weed and narrow leaf yucca also present. Cultural remains consist of chert detritus. One knife tip was observed, but not collected. No other diagnostic cultural material was seen.

42 Sa 5993 Elev. 2133m (7000 ft.) The area of occupation is a five meter square in a sandy soil at the base of a rock outcrop. The lithic scatter faces west at 270°, and is badly eroded and has been chained. Originally the site was in a juniper-pinon forest, but now crested wheat grass and sage growth predominate. A number of gray chert flakes and a quartzite knife tip were observed, but no diagnostic tools.

42 Sa 5994 Elev. 2127m (6980 ft.) A small, but intensive lithic scatter is located in a seven meter square area on the north slope of an arroyo. The north side of the site has been chained, while the remainder has been heavily impacted by erosion and cattle grazing. The north end section is now seeded in crested wheat grass. The remainder is still a heavy juniper-pinon stand with growths of snake weed and ephedra. Numerous deer trails and coyote feces were observed at the site. Cultural materials consist of gray chert secondary flakes occurring at a density of seven per square meter. No diagnostic material was recovered.

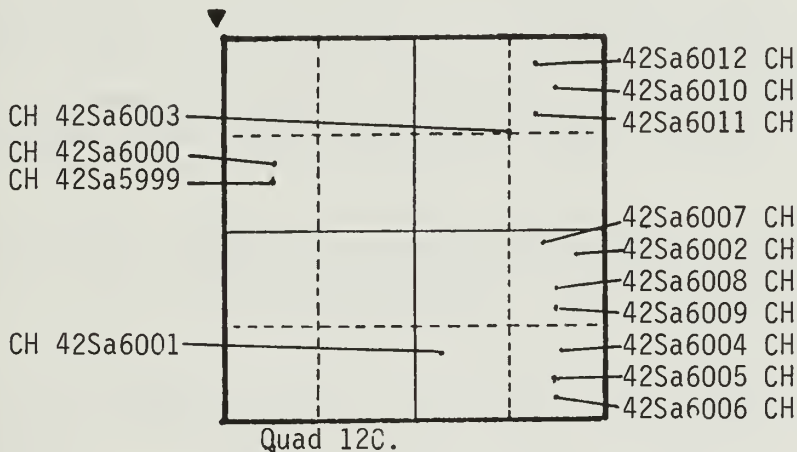
42 Sa 5995 Elev. 2121m (6960 ft.) The site area occupies 20 meters east-west by 40 meters north-south on a small knoll with a northeast slope facing 65° . The area is surrounded by arroyos and some secondary deposition has occurred on the north end of the site. The juniper-pinon forest formerly in the site area has been chained and seeded crested wheat grass and sage brush are now dominant. The cultural remains are chert and quartzite primary flakes with a few secondary flakes, suggesting a possible manufacturing function for the site. No diagnostic tools were recovered.

42 Sa 5996 Elev. 2118m (6950 ft.) A lithic scatter contained within an area 20 meters east-west by 30 meters north-south on a slope facing west at 270° . The soil is a fine, sandy clay which has eroded. The north edge has been cut by an arroyo. Formerly a juniper-pinon forest, the area is now seeded with crested wheat grass. The cultural materials are mainly white secondary chert flakes; no diagnostic material was observed. The activity of surface collectors is evidenced by several piles of flakes.

42 Sa 5997 Elev. 2109m (6920 ft.) Lithics are scattered over an area of 20 square meters on an eroded slope facing south at 200° . The area is in sandy red clay amid a heavy juniper-pinon forest with a snake weed understory. Erosion has exposed a natural white chert, but cultural materials are reddish-brown primary chert flakes. No diagnostic artifacts were located on the site.

42 Sa 5998 Elev. 2978m (6820 ft.) A light lithic scatter occupies an area of 30 meters square with a northwest aspect of 340°. The site has been chained and is now eroding into a small arroyo. The sandy, shallow soil formerly supported a juniper-pinon forest but the area is now seeded with crested wheat grass. Cultural material consists of secondary and tertiary white chert flakes. No diagnostic tools were observed.

Quad 120. (Sec. 17 NW 1/4, T29S, R24E) This quadrant is marked by two zones. One is an open sage brush area and the other involves eroded, juniper-pinon-covered hills. The northwest portion of the quad has also been developed into a large reservoir area which has involved the construction of two small dams. The more westerly quarter of the unit is the sage area. This also includes some isolated areas of chained juniper and pinon. The remaining area, aside from the reservoir, is dominated by rolling hills cut by active arroyos. Gullying has exposed large amounts of lithic material suitable for flaking. The entire unit has been greatly impacted by grazing, chaining and the construction of three separate power lines. Every site found had either been vandalized or seriously impacted by the search for minerals. (Corner marker located.)
GRASS.



42 Sa 5999 Elev. 2000m (6560 ft.) The lithic materials are scattered 50 meters north to south by 75 meters east to west and run down a ridge slope toward the valley. The site, in aeolian soil, has been nearly destroyed by two power line corridors and by erosion. Vegetation is juniper-pinon with crested wheat grass, snake weed and yucca. Lithics observed were both chert and quartzite secondary flakes. The material available was not sufficient for further culture determination.

42 Sa 6000 Elev. 2000m (6560 ft.) The site is 30 meters north to south and 60 meters east to west. It is located on a ridge slope facing a valley to the west; arroyos cut into the hills on both sides. This is a long, narrow lithic scatter in a residual sandy soil. Power line access disturbance, erosion, and deer trails in the area render the site condition poor. Juniper-pinon and sage with snake weed comprise the main vegetation. Lithics observed were primary quartzite flakes and secondary chert flakes. Culture-period is indeterminate.

42 Sa 6001 Elev. 2009m (6590 ft.) The lithic scatter is 40 meters square on a rocky slope facing west and looking into the valley and an arroyo. The soil is residual and is eroded. Juniper-pinon with small snake weed patches and ephedra comprise the main vegetation. The lithics observed were mostly chert secondary flakes and some small tertiary flakes with large quantities of quartzite which had not been utilized. Cultural information inadequate for further cultural determinations.

42 Sa 6002 Elev. 2006m (6580 ft.) The site, 120 meters square, is situated in fine residual sand. The lithics are scattered along a ridge which gives access to the surrounding area. The area has been impacted by erosion, claim markers, road construction and vandalism. Juniper, pinon, ephedra and snake weed comprise the main vegetation. Some lithic concentrations exist in furrow arroyos and thus appear to be secondary deposits. Lithics were chert and quartzite flakes of various sizes along with some cores while only a few tools were observed. The materials available were not sufficient for further cultural identification.

42 Sa 6003 Elev. 2000m (6560 ft.) The site extends from west to southeast. The lithic materials run 75 meters north to south and 150 meters in a general west to southeast direction. The site is on a ridge top with several arroyos leading away in all directions. The soil is a shallow residual sand which has been disturbed by erosion, access roads, and fences. Vegetation is mainly juniper-pinon along with ephedra, yucca and snake weed. Lithics observed show extensive use of native quartzite as well as primary and secondary chert flakes, the source of which is unknown. The lithic materials available were not sufficient for further cultural determination.

42 Sa 6004 Elev. 2006m (6580 ft.) The lithic scatter is 30 meters north to south and 60 meters east to west and is located on the south slope of an arroyo which leads to the sage flat to the north. The area is between two small arroyos in a fine, sandy alluvial soil. Vegetation is juniper and pinon with sage nearby, though none is present in the site. Lithics observed were secondary chert flakes. No culture-period could be determined.

42 Sa 6005 Elev. 2006m (6580 ft.) The site, 15 meters square, sits on a ridge top formed by a rock outcrop which provides an excellent view of the valley. Arroyos run in all directions. The area is disturbed by drill pad access roads which have disturbed the shallow residual soil. Vegetation consists of juniper-pinon and snake weed. Lithics are white chert flakes of the secondary type and were not sufficient for further cultural determination.

42 Sa 6006 Elev. 2001m (6565 ft.) The lithic area is 8 meters north to south and 20 meters east to west on the edge of an arroyo between an access road and a former juniper-pinon flat which has been chained and seeded. The site is eroded and contains a shallow alluvial soil which is washing into an arroyo. The main vegetation is juniper and pinon with sage, crested wheat grass and snake weed. Lithics observed were primary quartzite flakes and were not sufficient to make further cultural observations.

42 Sa 6007 Elev. 2015 (6610 ft.) The lithic scatter runs 20 meters north to south and 25 meters east to west on a slope of sandy alluvial soil. Erosion and some evidence of animal movement have reduced the site to a poor condition. Vegetation is mainly juniper-pinon and snake weed. This site has green-gray chert which has not been found in the other sites in this area. Culture-period is indeterminate.

42 Sa 6008 Elev. 2018m (6620 ft.) A lithic scatter is 30 meters square and located on a slope 75 meters north of a saddle at the head of a major westward drainage. The soil is a sandy alluvium. There are deer trails and erosion throughout the area. There is a drill pad in the site and several piles of lithic materials of recent origin. Vegetation consists of juniper-pinon along with snake weed, sage and thistle. Lithics observed are mainly primary and secondary chert flakes which were not sufficiently diagnostic to make further cultural determination.

42 Sa 6009 Elev. 2018m (6620 ft.) Located on a ridge running east-west, the site is 20 meters north to south and 30 meters east to west. The site opens onto a sage flat with an arroyo to the north. Lithics are scattered in the sandy alluvial soil. Historical trash, roads, and drill pads along with erosion and deer trails have contributed to the poor condition of the site. Juniper-pinon and sage along with some snake weed comprise the main vegetation. Lithics observed were mainly debitage. Culture-period indeterminate.

42 Sa 6010 Elev. 2014m (6610 ft.) The site is a 15 meter square lithic scatter found on the slope of a partially cleared and seeded arroyo. Another arroyo is located to the west and draws toward a reservoir. Deer trails and erosion in the fine alluvial soil have rendered the site condition poor. The main vegetation is juniper-pinon with sage and crested wheat grass. Primary chert flakes were present. No culture-period could be determined.

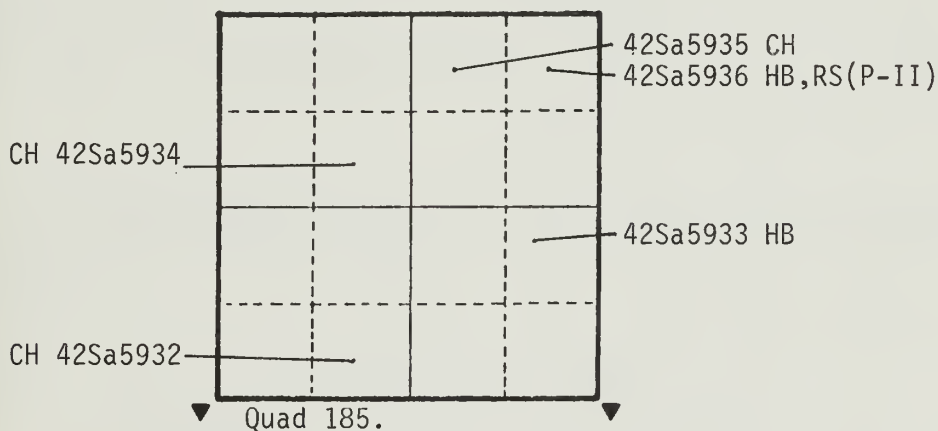
42 Sa 6011 Elev. 2000m (6560 ft.) The site is 40 meters square and located on a slope cut by an arroyo looking out into East Coyote Wash. The lithics are scattered in a loose alluvial sand. Several deer trails and erosion have destroyed most of the site area. The main vegetation is juniper-pinon and sage with some snake weed. Lithics observed were mostly chert detritus, indicating a possible hunting site of limited use. Further cultural determinations could not be made on the basis of the cultural debris present.

42 Sa 6012 Elev. 1996m (6550 ft.) Lithics are scattered over an area 15 meters square on a slope in a wash that empties into East Coyote Wash to the north. The soil is a sandy clay. It is badly eroded with deer tracks and evidence of vandalism, all contributing to the poor condition of the site. There is a possible historic campfire in the west part of the site near an arroyo. Vegetation is juniper-pinon and sage along with snake weed, ephedra and yucca. The lithics observed were primarily chert detritus. Culture-period indeterminate.

Quad 128. (Sec. 18 SW 1/4, T29S, R21E) A juniper-pinon stand dominates this quadrant. The forest is thinnest along the southern boundary and becomes much thicker as one moves to the northern edge. The terrain is fairly flat with but one low ridge running north and south. The area has been heavily grazed and subjected to considerable impact by oil-drilling equipment. No sites were found. (Corner marker found.) JUNIPER-PINON.

Quad 143. (Sec. 1 SW 1/4, T29S, R20E) A major cliff face and its associated talus slope constitute a wasteland zone covering 18% of the unit. It is marked by the growth of a few stunted sage and juniper along with some cacti. Very little grass was observed. A second zone is a badly eroded area of shallow soil located between a large ridge and a mesa top. This covers the remainder of the quad. Loose soils and residual sands in the area are seriously eroded. Some snakeweed, yucca, cacti and stunted sage grow in the zone which lacks either trees or grass. No sites were found. (No marker could be found.) Apparently lost to heavy erosion. Corner calculated by triangulation on topographic features.) DESERT SHRUB.

Quad 185. (Sec. 35 SW 1/4, T29 1/2 R22E) The quadrant is marked by three types of terrain: terraced ridges, flats, and a wash. The terraced ridges converge into a point in the southwest portion of the unit. The balance is flat land cut by Hatch Ranch Wash which runs from north to south. The unit is covered by sage brush over 60% of the quarter section while 35% has a juniper-pinon overstory. About 5% of the land is wasteland. --- Five sites were recorded. Two were flaking areas, one was a large quarry site, and two were habitation sites. One of the latter was in an open area while the other was found in a rock shelter. (Two markers were located.) JUNIPER-PINON.



42 Sa 5932 Elev. 1829m (6000 ft.) This site is a large lithic scatter and quarry area primarily centered upon a bench or terrace. It is 400 meters north-south and 440 meters east-west. The general condition of the site is fair to good with some erosion occurring. The major vegetation includes juniper and pinon, rabbit brush, yucca, and saltbush with clumps of wild grasses growing where conditions permit. Most artifacts observed are rudimentary forms and debitage (flakes, cores and raw materials). Some blade forms were also noted. The culture-period is indeterminate.

42 Sa 5933 Elev. 1780m (5840 ft.) The presence of three metates suggests that this may have been a habitation site. It is tightly clustered and is mainly confined to a five by five meter area. The site lies on a gradual slope in residual soils just above a natural seep noted a few meters to the north. Directly below the site about 150 meters to the west is a wash which empties into Hatch Ranch Canyon. The site is in good condition and only slight soil erosion has disturbed the area. The vegetation consists mainly of juniper and pinon trees sparsely separated with saltbush and gambel oak intermingled. No depressions or structural evidence was observed. Artifacts include waste flakes, three cores, raw materials, one mano, and three metates. Culture-period affiliation is indeterminate.

42 Sa 5934 Elev. 1792m (5880 ft.) The site area measures six meters by six meters and affords a view to the north. The site is nearly level with a ground slope of only 2°. Soils are residual in origin and only a minimum amount of erosion has occurred thus leaving the site in good condition. Major vegetation around the site consists of sparsely separated juniper and pinon trees with some short sage brush. Artifacts consist mainly of large primary flakes and the site is probably a small chipping station. The only artifacts observed were waste flakes and one blade form, thus no cultural determinations could be made.

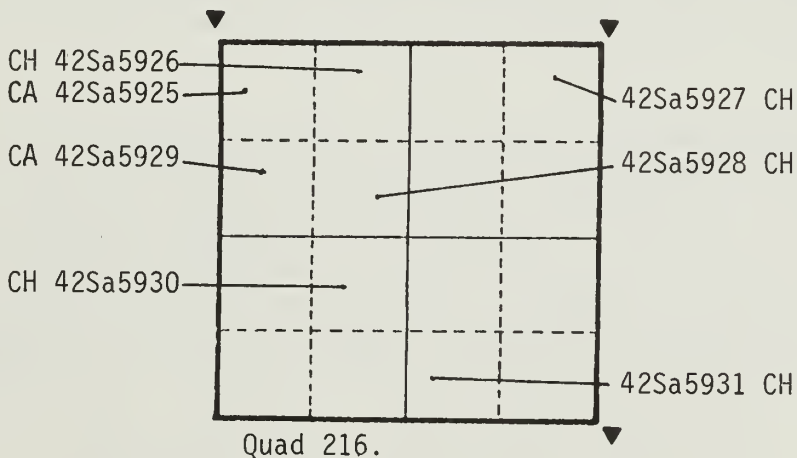
42 Sa 5935 Elev. 1792m (5880 ft.) The site consists of a ten meter square which has been blown clear to reveal slick rock. It is basically level (less than 1° gradient) and faces generally northeast. Located on a ridge, the site provides a view of Hatch Ranch Wash to the east. The condition of the site is good with only a few areas blown out. Some natural erosion of the remaining soils has occurred. Vegetation is primarily juniper trees with sage brush, ephedra and yucca plants. Cultural debris was limited to waste flakes and blade forms, thus making a cultural determination impossible.

42 Sa 5936 Elev. 1768m (5800 ft.) This habitation site is 25 meters north to south and 20 meters east to west. It consists of a rock overhang with slab walls and lies in the Hatch Ranch Wash about 10 meters above the present wash bed. Exposure of the site is to the east and a gradual talus slope (4°) descends from the mouth of the rock shelter to the wash. Soils are of alluvial origin and little erosion has occurred in the site itself due to protection from the

42 Sa 5936 (Cont) elements. Most of the site has been destroyed by vandalism. At least three pot holes have been placed in the site at varying depths. The dominant vegetation is juniper and pinon trees with a few sage brush and saltbush plants intermingled. Observed artifacts include waste flakes, blade forms, scrapers, a grinding stone and one sherd of thumb-nail-incised gray ware. Cultural determination is not possible with the observed and recovered artifacts.

Quad 208. (Sec. 29 NW 1/4, T29S, R20E) The quad is the ultimate for Canyonlands--slick rock! Only 10% of the quarter section produces some grass in the form of small growths of cheat grass and crested wheat grass. In the rocky portions, the wasteland, some very sparse juniper-pinon is found to grow along with cacti, bitter brush, cliff rose and an unidentified broad leaf plant that resembles the dandelion. Areas of chert nodules were seen but there was no evidence of their exploitation by man. No sites were found. (No corner marker was found. Location established by compass march from Sec. 28-27 marker 1 mile away.) DESERT SHRUB.

Quad 216. (Sec. 23 NE 1/4, T30S, R23E) Low, north-south ridges with either juniper-pinon or sage brush cover characterize the quadrant. About 58% of the unit is covered with juniper-pinon while 30% is dominated by brush. The remaining 12% is wasteland areas of slick rock along the ridges. A bit of this is also located in the Hatch Wash bottom. --- Seven sites and several isolated artifacts were found. Five sites were chipping stations exploiting chert sources noted throughout the entire unit. Two sites proved to be camp sites; one with a few sherds and the other with clearly discernible charcoal stains. (Three markers were located.) SAGE BRUSH.



42 Sa 5925 Elev. 1780m. (5840 ft.) This apparent campsite is located in a small draw on a slope facing west at 280°. The site centers around a possible burned area on a sheltered slope that has an area of slick rock in the middle. Water is located 0.75 km to the north-east. Main vegetation in the area is juniper, sage brush, rabbit brush and grease wood. Lithic tools present include secondary and primary flakes, cores, hammerstones and one knife base. The cores and flakes suggest manufacturing activity; the knife base suggests hunting-eating. Cultural debris is not adequately diagnostic to assign this site a specific cultural affiliation.

42 Sa 5926 Elev. 1780m (5840 ft.) This apparent chipping site is a lithic scatter located on the edge of a small knoll. The site faces the northeast at 40°. The site area affords a good view to the north along Hatch Wash. Few tools were located. Most lithic material was found on slick rock where the wind has blown away the top soil and exposed the flakes. Game trails are present and it is possible that the area may have served as a game lookout. Main vegetation on the site is juniper (sparse), sage brush, grease wood and saltbush. Primary, secondary and tertiary flakes and cores were observed. Cultural debris present is not sufficient to determine specific cultural affiliation.

42 Sa 5927 Elev. 1767m (5800 ft.) This apparent chipping site is concentrated in a series of three blowout areas where erosion has uncovered underlying sandstone. The site is on a gentle slope facing east at 80° just above the Hatch Wash river bottom. Water is available 0.3 km to the east. Vegetation is largely sage brush, saltbush, and tumble weeds. The artifacts indicate hunting. Primary and secondary flakes, blade forms and two knives were observed. The cultural debris is located along the concave zone between the slick rock and soil. These cultural materials are not sufficiently diagnostic to assign the site a specific cultural affiliation.

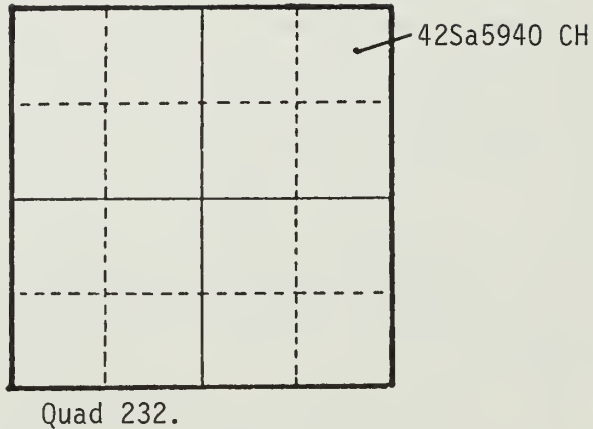
42 Sa 5928 Elev. 1792m (5880 ft.) This chipping site is located on a ridge between two small draws where it faces west at 270°. Like the other four sites found in this section, it provides a good view to the north. Water is 0.5 km to the east. The site is subject to wind erosion and exhibits a possible rock alignment, one slab high and 1.5 meters long with no associated material. Pinon, saltbush, and wild grasses are the main vegetation. The site appears to be a manufacturing area with good concentrations of secondary flakes. Lithics observed include primary, secondary, and tertiary flakes, scraper blade forms, and cores. Cultural affiliation can not be assigned as cultural debris is insufficiently diagnostic.

42 Sa 5929 Elev. 1792m (5880 ft.) The probable camp site is on a slick rock ridge facing north at 0 to 10°. Most of the site has been badly washed out so the artifacts are lodged along the contact zone between the slick rock and the soil. In addition to extensive water erosion, there has been some terracing action as well. Pinon, broad leaf yucca, and mustard weed provide the main vegetation found in the site area. A high density of artifacts occurs with 60 to 70 per square meter. The dominance of secondary flakes indicates tool manufacturing. Secondary flakes, a core shatter, one knife tip, metate, and utilized flakes were observed. Cultural debris, insufficiently diagnostic to assign a cultural affiliation.

42 Sa 5930 Elev. 1792m (5880 ft.) This possible chipping site is located at the edge of a ridge exposed to wind action. The view from the site is to the north, east and west. Nearest water is 1 km to the west. This appears to be a manufacturing area with no habitation. Sage brush, saltbush, and rabbit brush are the main vegetative resources. The lithics observed were secondary flakes, utilized flakes, and blade forms. Cultural materials present are not sufficient to determine cultural affiliation.

42 Sa 5931 Elev. 1767m (5800 ft.) This site is a small manufacturing area located on the edge of a ridge at the head of a wash. The site faces southwest at 220° and is in the open with no wind breaks and with little vegetation. There is a road nearby and water is 0.7 km to the northwest. Main vegetation is sage brush, rabbit brush, and blue gramma grass. The site produced no tools, although some may have been collected by surface collectors. Lithics observed were confined to tertiary and secondary flakes. Culture-period is indeterminate.

Quad 232. (Sec. 23 NW 1/4, T30S, R22E) A juniper-pinon stand covers 45% and slickrock covers 40% of the unit. Sage brush accounts for only some 15% of the area. The quarter section is fairly flat although cut by intermittent gullies which run north to south. Windwhistle Rock dominates the northern edge of the quadrant. One site was located in a juniper-pinon stand in a small draw. (A possible corner marker was located. The pipe was found but the brass cap was missing. Triangulation on Windwhistle Rock and other features confirmed that this was the corner of the section.)
JUNIPER-PINON.



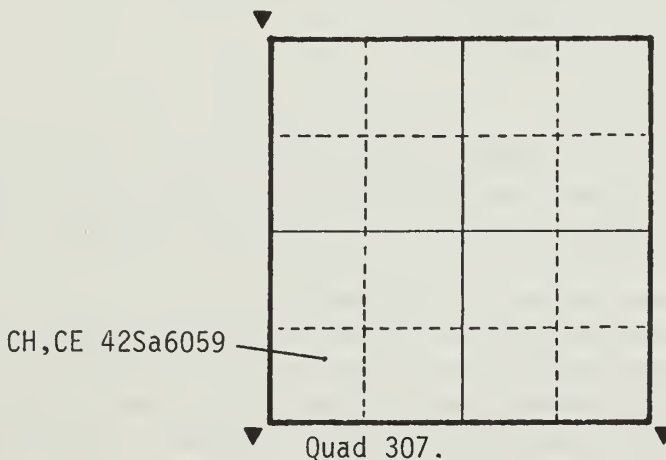
42 Sa 5940 Elev. 1865m (6120 ft.) This large quarry site exhibits concentrations of chipping stations within the area. The overall size of the site is at least 150 meters north to south and 60 meters east to west. Located on a ridge with fairly level terrain, the main exposure faces east with a 3-5° slope. The site sits in a protected area and forms a crescentic arc around a small wash which drains to the south. To the north is Windwhistle Rock which provides much of the site's protection. Most of the site lies on residual soils although there are some blowouts and drifting soil onto natural slick rock exposures. Minimal erosion leaves the site in good condition. The site is in a juniper-pinon woodland area with yucca and rabbit brush as understory. Artifacts consist of cores, waste flakes and blade forms, none of which could suggest a cultural determination.

Quad 241. (Sec. 22 SE 1/4, T30S, R22E) This quadrant is contiguous with Quad 242 which lies to the east and they are of similar ecological make up. The greatest difference is in the extent of the juniper-pinon overstory. About 70% of this unit is made up of gently rolling hills covered with juniper and pinon. Only 35% of 242 is similar. Sagebrush flats in this quad cover some 20% of the area while slickrock wasteland accounts for the remaining 10%. No sites were identified. (Marker was found.)
 JUNIPER - PINON.

Quad 242. (Sec. 23 SW 1/4, T30S, R22E) This quad is contiguous with 232 on the north and with 241 on the west. It is close to Bobby's Hole and the ground is somewhat more rugged than that noted in the other two quads. Along the north is a large sage brush flat covering about 30% of the unit. The juniper-pinon zone comprises about one third of the area and concentrates on the ridges and around the canyon heads that mark the central and southern part of the quarter section. The wasteland amounts to 37% of the area and involves slickrock areas in the canyon heads in the southern part of the section. No sites were found. (No marker found but lines laid out from markers in Quad 232 and Quad 241 make the location certain.) JUNIPER-PINON.

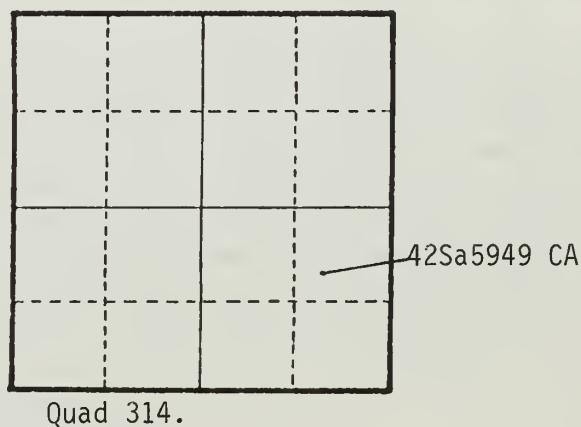
Quad 303. (Sec. 33 SW 1/4, T32S, R21E) A broad, flat bench covered with a heavy stand of juniper and pinon dominates 93% of the quadrant while the remaining 7% is wasteland. Most of the bench has been chained and only a thin band of trees remains along the ridge area at the base of the bench. Three random manos, not associated with each other, were found in the chained area but no sites were identified. (No marker was found. Triangulation on topographical features established the location.) GRASS.

Quad 307. (Sec. 6 SW 1/4, T30S, R20E) A sand flat with a sagebrush overstory covers 93% of the unit. Low sandstone outcrops with some juniper and pinon comprise the remaining 7% of the area. Altitude variation over the entire quadrant is no more than 80 ft. Jasper flows originate in the Chinle formation at the top of the outcroppings. The one chipping site identified utilized this material. Blades, knives, and point fragments were found at the site. (The quad was located by a National Park boundary sign and with three survey markers identifying the same section.) DESERT SHRUB.



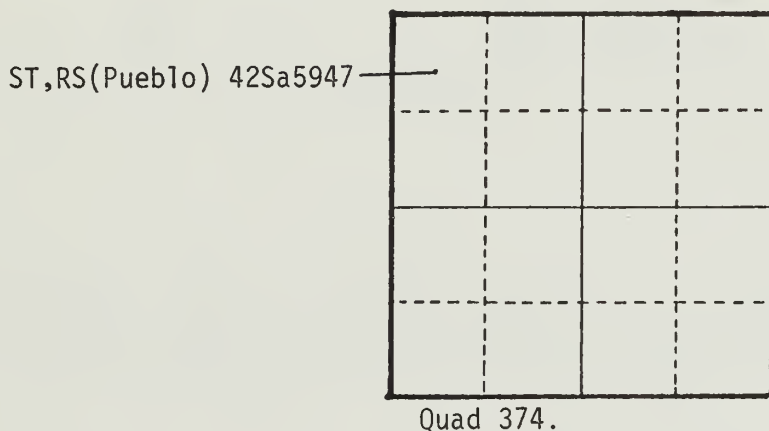
42 Sa 6059 Elev. 1487m (4880 ft.) Covering a medium sized area, the site is roughly 50 meters square. It is a lithic scatter with an associated jasper source. The location above a ledge provides a view of the goosenecks of the Colorado. Although there is some evidence of wind erosion, the site is in good condition. The site is in a well spaced juniper-pinon stand with saltbush and yucca dominating the understory. The lithic materials, including flakes, blades, bifaces and points, provided no clues from which to make a cultural identification.

Quad 314. (Sec. 3 SE 1/4, T30S, R20E) Three ecozones can be identified here. A large flat dominated by sage and saltbush covers 94% of the area. About 2% of the area is given to a juniper-pinon stand in the northeast corner of the unit. The remaining 4% is slickrock wasteland. A large bed of jasper dominates the middle of the quarter section and a small flaking site was found here. An isolated mano was also noted. (A cairn of rocks, but no pipe or brass cap, was found. Triangulation on topographical features established this as the corner.) DESERT SHRUB.



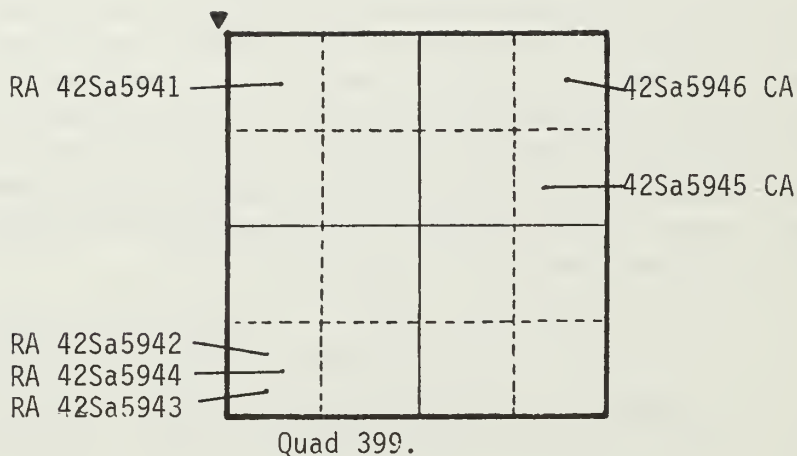
42 Sa 5949 Elev. 1463m (4800 ft.) The probably campsite is located on a gentle sand slope that bisects a slickrock outcrop on the west edge of the site. The site is located 50 meters from the east boundary of the quarter section and 350 meters north of the southeast corner. It is far from permanent water sources. Vegetation on the site is comprised of sagebrush and ephedra. Cultural material is dominated by a red chert. The site contains hunting tools (blades, points and knives) and tool manufacturing waste. It may have been a hunting camp. Lithic materials available were not sufficient to diagnose specific culture affiliation.

Quad 374. (Sec. 31 NE 1/4, T31S, R22E) A mesa top covered with a juniper-pinon stand, cliff faces, and sage brush flats comprise the three ecozones of the quadrant. The mesa, isolated and difficult of access, occupies 85% of the quarter section. One site, a vandalized granary, was found on a small ridge on the mesa top. The brush flats occur in the Indian Creek bottoms and at the edge of the cliff faces. These comprise no more than 3% of the area. The remaining 12% is wasteland. (No corner markers were found. Aerial photos and the topographical map were used to establish location.) JUNIPER-PINON.



42 Sa 5947 Elev. 1780m (5840 ft.) The site centers on a slab-lined structure measuring eight meters north-south by three meters east-west, and has a general exposure to the west. It is located in an undercut at the head of a canyon. There appears to have been two or three tiers of dry stone masonry used in the construction. The structure may have been a granary but the site has been badly vandalized and only a few stones of the original walls remain in place. Below the site is a long, steep talus slope. Vegetation near the site and on the talus slope is sparse and consists of juniper and pinon, sage brush and ephedra. No artifacts were observed and no culture determination was possible.

Quad 399. (Sec. 8 NW 1/4, T32S, R22E) Two zones cover equal areas in this quadrant. One is a juniper-pinon overstory while the other is a wasteland of cliffs and steep talus slopes. Four petroglyph sites were found along the cliffs. Two small sites were also found in the juniper-pinon of the mesa top. Both show evidence of burning as in a fire pit and a roasting pit. (A marker was found.) JUNIPER-PINON.



42 Sa 5941 Elev. 1829m (6000 ft.) The site, a petroglyph panel, is one meter high and four meters wide and is located on the west side of a large sandstone block which has been severed from the cliff face to the east. The block rests at the base of the cliffs and lies on a ground slope of about 8° . At the base of the petroglyph panel there may also be an ash or fire area. The condition of the panel is good, but there has been some erosion of the soil around the block. The panel contains two figures; the left figure is anthropomorphic and appears to be carrying a shield or vessel on the left arm. The right hand figure is not clearly either man or animal. A horizontal tubular shape is shown. Seven appendages extend from this shape, three along each side, nearly aligning as three opposite pairs. The seventh extends out from the top of the right end at an angle. This figure might be a deer or a horse. The anthropomorph is 36 cm high. General vegetation around the site includes juniper-pinon woodlands with a few pine and sage brush. No artifacts were observed and culture period is indeterminate.

42 Sa 5942 Elev. 1828m (6000 ft.) This site is a series of petroglyph panels with an associated lithic scatter. The panels all face due west and cover an area of 60 meters north-south and 25 meters east-west. The ground area in front of the panels slopes down to the west at about $3-5^{\circ}$. Panel A and B have been pecked on the cliff face while panel C was found on a sandstone block which has fallen from the cliff and come to rest about 40 meters away from its base. This block lies on a small talus area and the

42 Sa 5942 (Cont) small lithic scatter is associated with it. The site condition is good with no real erosion or vandalism being noted. Panel A contains anthropomorphic figures, a possible zoomorph, and other representations. Panel B has animal figures and other forms; Panel C shows animal figures or parts of them, and what may be animal footprints. The vegetation in the area is mainly juniper-pinon woodland with yucca, rabbit brush, sage brush and prickly pear cactus form the understory. Artifacts include flakes, a knife tip and a few manos. The style of the petroglyphs seem to indicate they are of Anasazi origin.

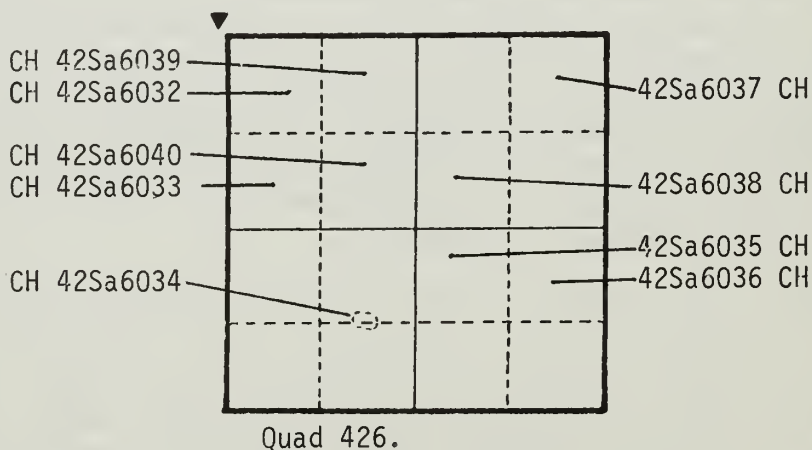
42 Sa 5943 Elev. 1828m (6000 ft.) This site is a petroglyph panel located at the base of a cliff. The panel is two meters square and faces west. It appears to have two designs seemingly clustered into two distinct elements. The right-hand cluster includes three horizontal bars over an apparent "animal" head. The left element seems to be an incomplete figure. The alluvial soil below the panels slopes down at between 3 and 5°. The site terrain is broken with most of it below the site being talus slope. The site itself has not been disturbed and it lies within a juniper-pinon woodland which includes sage brush and wild grasses as undergrowth. No artifacts were noted and thus no culture determination is possible.

42 Sa 5944 Elev. 1828m (6000 ft.) The site is a petroglyph panel, 10 by 12 meters, which generally faces west. It is located at the base of a cliff and just inside a chimney. The ground slope below the panel is 3 to 5° and soils are of an alluvial nature. A small ledge extends out and away from the cliff base. The panel has eight design units, most of which are men and sheep. The site is undisturbed and lies within a juniper-pinon woodland. Sage brush is also present. Only one waste flake was observed at the site. No culture determination is possible.

42 Sa 5945 Elev. 1877m (6160 ft.) A small roasting pit is two meters north-south by three meters east-west. Located in a small wash in residual soils, the site generally faces northwest. Ground slope is 2° or less so that its exposure is generally open. The roasting pit resembles Paiute roasting pits and has not been disturbed. Most of the vegetation in the area is juniper-pinon woodlands with small amounts of ephedra and sage brush. The only artifact noted was a red chert projectile point tip. Culture period indeterminate.

42 Sa 5946 Elev. 1871m (6140 ft.) The site, a small camp area, is one meter square and consists of a small fire pit located in a little wash. Soils are residual and the ground slope is 6°. The site has not been disturbed except for slight erosion. Vegetation around the site is juniper-pinon woodland with some prickly pear. No artifacts were observed therefore no culture determination can be made.

Quad 426. (Sec. 21 NW 1/4, T28S, R23E) The quadrant is on a large bench between Muleshoe Canyon and the mesa to the east of it. The area is eroding in a flow to the west and to the south into Muleshoe Canyon. The region has been heavily impacted by grazing and by mineral development. --- About 60% of the unit is distinguished by a large flat area with a few widely spaced juniper and pinon. Seeding has produced extensive areas of crested wheat, blue gramma, and perhaps other grasses. The soils of red clay and sand are shallow but support prickly pear, yucca and sage brush as an understory. Three sites were found in the zone. --- The second element is an eroded area cut by gullies between small, rounded ridges and sandstone outcrops. Grass and a few trees are to be noted. This area runs along the edge of Muleshoe Canyon where gullying is deeper and has exposed slickrock. The zone comprises about 20% of the quarter section. Four sites were recorded. --- A highly eroded talus bench formed of a massive chert outcrop along Muleshoe Canyon is a third zone. A few pinon and juniper keep company with bitter brush. Terrain is extremely broken due to the chert outcrop. The area covers 20% of the quad. (A marker was found.) SAGE BRUSH.



42 Sa 6032 Elev. 1646m (5730 ft.) This is a small lithic site confined to a 4 by 4 meter area on a bench surfaced with a sandy red soil. The site slopes northwest at 340°, and has a furrow arroyo running through it. There are a few juniper and pinon in the area but the dominant vegetation appears to be rabbit brush, sage brush, and snake weed. Grazing has disturbed the site considerably. Cultural material consists of a chert core, several primary flakes, and a white chert corner-notched point with serrated margins. This site is probably Anasazi although a more precise time frame is not possible.

42 Sa 6033 Elev. 1748m (5743 ft.) This rather thin lithic scatter covers an area 100 meters east to west by 110 meters north to south. Situated well up on the north bank of Muleshoe Canyon, the site is cut by a number of small arroyos apparently created by heavy grazing in the loose, sandy soil. Rock outcrops are visible on the surface at a number of places within the site. The site is covered with a few scattered juniper and pinon but the dominant vegetation is sage brush, crested wheat grass and snake weed. Most of the lithic debris is made up of secondary flakes of chert. Nothing was found to suggest a cultural affiliation.

42 Sa 6034 Elev. 1782m (5670 ft.) The site is located on a bench part way up the north bank of Muleshoe Canyon where it covers an area measuring 120 meters north-south and 400 meters east-west. The soil is shallow and eroded. The erosion has exposed a massive chert bed which produces two distinct types of stone. In the western portion the material is a white chert from which nearly all of the flakes observed on the site have come. The eastern portion produces a blocky, poor quality red chert for which there is little evidence of use. A few stunted junipers and pinon were noted in the site area and these were interspersed with growths of ephedra, grasses, and snake weed. Most of the erosional channels flow south into Muleshoe Canyon and a flake scatter could be seen at the base of the cliff. No diagnostic tools were found.

42 Sa 6035 Elev. 1816m (5960 ft.) The site is a lithic scatter measuring 20 meters square which is situated on a bench east of Muleshoe Canyon. The site slopes down to the northeast with drainage entering a canyon east of Muleshoe. The shallow, sandy soil is eroded to the extent that the underlying slickrock is exposed at a number of places near the site. This erosion has also redeposited some of the lithic material. While a few small juniper

42 Sa 6035 (Cont) and pinon are found in the area, dominant vegetation appears to be cheat grass and snake weed. Lithic materials were restricted to primary flakes of white chert and thus no culturally diagnostic materials were found.

42 Sa 6036 Elev. 1743m (5720 ft.) A lithic scatter measuring 350 meters east-west and 50 meters north-south was found above the edge of a cliff that drops into Muleshoe Canyon. The aeolian soil and sand combination has been subjected to heavy grazing which appears to have accelerated erosion to the point that it has exposed the underlying slickrock at many points. Although there are scattered juniper and pinon in the area, grasses, snake weed, yucca and cacti dominate the plant community. Primary and secondary flakes of white chert form the only evidence of human activity and thus a culture-period cannot be assigned.

42 Sa 6037 Elev. 1749m (5740 ft.) Sloping down to the west, the site is a 100 meter square with the scatter resting on a level bench which is covered with shallow soil. Erosion has exposed the underlying slickrock in many places while historic road construction and grazing as well as the activity of surface collectors have all had additional impact. An active spring, which now provides water for a stock pond, must have made the site more attractive than most and this perhaps accounts for the rather dense and extensive distribution of flakes. Despite this, however, no diagnostic material could be detected.

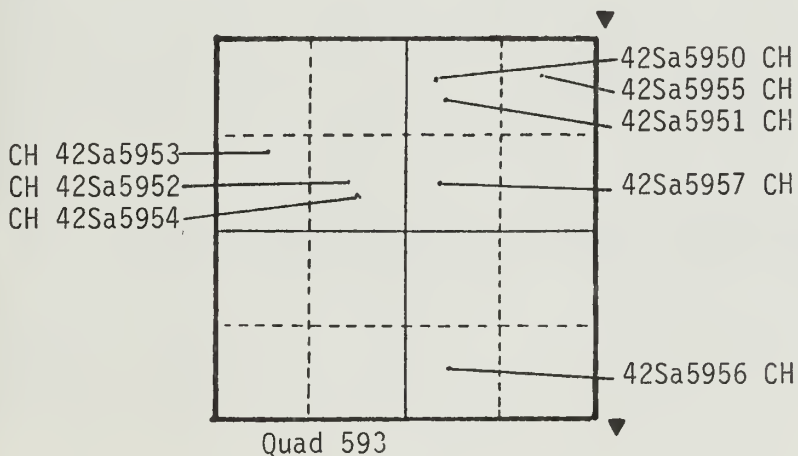
42 Sa 6038 Elev. 1752m (5750 ft.) This lithic scatter covers a 15 meter square located on an open flat where scattered juniper and pinon join with a few clumps of snake weed and crested wheat grass to provide the limited floral resources. With a slight slope to the north-west, the site has been substantially disturbed by several shallow washes which cut across it. Since only white chert flakes were observed, no cultural determination is possible.

42 Sa 6039 Elev. 1749m (5740 ft.) Measuring only 10 meters square, this lithic scatter rests on a sand dune where the general slope is down to the west. Substantial grazing appears to have accelerated the erosion process. The site is dominated by sage brush, snake weed, and curly grass although a few small juniper and pinon are to be seen. Although cultural debris was rather dense, it was limited to white chert primary flakes, thus precluding any cultural identification.

42 Sa 6040 Elev. 1749m (5740 ft.) A lithic scatter located on nearly level terrain but with a slight slope down to the southeast. Covering a 20 meter square, the site has been nearly destroyed by the erosion process which has probably been intensified by grazing. Essentially in brushland, the area is characterized by sage brush, snake weed, and crested wheat grass although widely scattered juniper and pinon are also present. Cultural evidence is confined to white chert primary and secondary flakes. A cultural determination could not, therefore, be made.

Quad 580. (Sec. 5 NE 1/4, T30S, R23E) The unit is characterized by a long, sweeping slope which tends to fall generally from the southwest down towards the northeast. The area is predominantly brush land although this overstory thins towards the eastern edge of the quad and grass seems to become more abundant. No sites were identified. (No corner marker found.) DESERT SHRUB.

Quad 593. (Sec. 1 NE 1/4, T30S, R23E) A large sandstone block, thrust up from the floor of Dry Valley, dominates the quadrant. The top of the block is capped by several layers of less well consolidated sandstone and large bodies of pink and red chert. Resting on the chert and sandstone are numerous shallow sand dune areas. The quarter section is drained by Lopez Gulch but numerous gullies cut across the mesa top. A moderately dense juniper-pinon forest covers some 60% of the mesa top with an understory of cacti, yucca, ephedra, snakeweed, cheat grass, bitter brush and a few wild flowers. About 10% of the unit is wasteland with exposed chert and slickrock. The remaining 30% is a rapidly eroding talus zone characterized by a very few juniper and pinon, some yucca and cacti, and a little grass. All eight sites found in the quad were located on the forested mesa top. (Two markers were found.) JUNIPER-PINON.



42 Sa 5950 Elev. 1929m (6330 ft.) The site, a four meter square lithic scatter, is located in broken terrain in a sand blowout on a mesa top. The canyons drop off 70 meters to the north and 200 meters to the south. A small rock layer sits about 10 meters to the east. Considerable erosion and secondary deposition are evident while numerous deer and cattle trails are present. The main vegetation is juniper with some pinon while ephedra, snake weed, bitter brush, prickly pear and small narrow leaf yucca form a complex understory. Secondary and tertiary flakes of pink and gray chert and a possible scraper were observed. Culture association indeterminate.

42 Sa 5951 Elev. 1929m (6330 ft.) The site consists of three lithic concentrations found in a sand blowout on the broken terrain of a mesa top. Area one on the north side is a source of chert; Area two (10 meters at 170° from area one) is a chipping station and Area three, another chipping station is 15 meters south of area one at 110°. The total area is 20 meters north to south by 150 meters east to west and is 70 meters from the cliff edge to the northeast. The soil is loose, blown sand. The entire site area has been subjected to considerable water erosion. It is located 70 meters south of the drop into Hook and Ladder Gulch. Juniper and pinon are the dominant vegetation along with ephedra and snake brush. Several deer trails cut through the site area and coyote and deer feces were noted. Lithics observed were mostly primary thin white chert flakes which were concentrated in the wash areas indicating considerable secondary deposition. Culture-period is indeterminate.

42 Sa 5952 Elev. 1929m (6330 ft.) The site is a seven by seven meter lithic scatter. It is situated in broken terrain on a mesa top rimmed on the northwest by a rock layer. The aeolian soil shows some secondary movement on the second terrace above the main cliff at Lopez Gulch. It may have been a dry hunting camp situated in a juniper-pinon stand with ephedra and snake weed also present. Primary and secondary flakes together with a scraper and knife blade were observed. Culture affiliation could not be determined on the basis of the lithic materials present.

42 Sa 5953 Elev. 1914m (6280 ft.) The site, five by five meters square, is located in broken terrain on a mesa top near the west edge of Lopez Gulch on the northern arm of the canyon. It is a lithic scatter in aeolian-type soil. Some erosion is evident and a deer trail runs north of the site. Juniper and pinon are the major vegetation along with ephedra, prickly pear and sparse snake weed. A scatter of primary pink chert was found without related source materials. Culture affiliation is indeterminate.

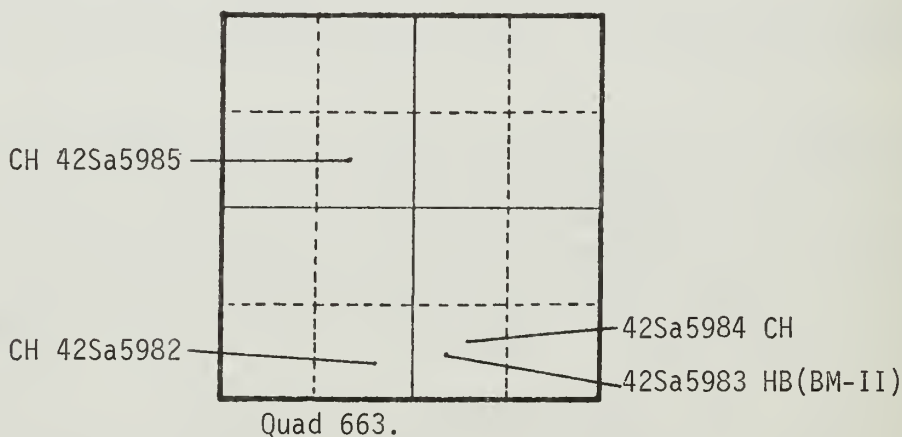
42 Sa 5954 Elev. 1914m (6280 ft.) The site, a 30 by 40 meters lithic scatter, is concentrated in several sandy arroyos along a mesa top. There is considerable secondary deposition which has concentrated the cultural material in the washes. The sand is not too deep and, in several areas, rock protrudes to the surface. Several deer trails were observed within the site. Vegetation is juniper-pinon with ephedra and snake weed also present. Below the site is a large layer of chert material which may have been the source of flaking stone. Lithics observed were primary detritus chert with no tools nor tool fragments. The materials available were not diagnostic thus no specific culture affiliation could be assigned.

42 Sa 5955 Elev. 1914m (6280 ft.) The site is 40 meters square and is located on a mesa top 75 meters due south of the section bench mark. In the site area are five small lithic scatters in shallow aeolian sand. The area is eroded and several deer trails run through the site. Juniper and pinon with some ephedra and snake weed make up the vegetation. Lithics observed were mostly white and pink chert primary flakers. Culture association is indeterminate.

42 Sa 5956 Elev. 1890m (6200 ft.) The site is a two meter square lithic scatter, located in loose sand on a mesa top between canyons. The area is washed out and there is evidence of deer movement in the site. Vegetation is juniper-pinon and some ephedra. Very few flakes and no tools were observed. Culture affiliation indeterminate.

42 Sa 5957 Elev. 1926m (6320 ft.) The site, one meter square, rests on a mesa top looking into Lopez Gulch. The lithics are scattered in rocky soil with some sand. The site is eroded and deer trails are within the area. Vegetation is juniper-pinon, bitterbrush and ephedra. Lithics observed were primary flakes, not sufficiently diagnostic to assign culture affiliation for the site.

Quad 663. (Sec. 30 SW 1/4, T30S, R25E) This quarter section is best described as a wide and deep alluvial valley sandwiched between two large sandstone ridges to the east and west. Unusually diverse, the area produces four zones. The first is composed of slickrock and steep talus slopes amounting to 34% of the quadrant. The slickrock tends to dip to the south and has small fissures and gullies breaking up the rock. Some vegetation has accumulated in these broken areas and two lithic sites were found in such pockets. --- The second zone is a drift area of accumulated aeolian sands with a light cover of juniper and pinon, sage and snake weed. The two largest sites were found in this zone though it covers but 8% of the total area. This area blends into the remaining two. --- A flat composed of deep alluvial soil characterizes zone three. Extremely tall four-wing saltbush, sage, and rabbit brush indicate greater moisture though erosion and grazing have heavily impacted the area amounting to 20% of the unit. No sites were found in this component. The fourth zone is a wide valley floor with small sage brush, saltbush and some grass covering 40% of the quadrant. This treeless area has been heavily grazed. No sites were found. (Marker not found. Would have been in a wash and has thus doubtless eroded out. Position established by triangulation on topographic features.) JUNIPER-PINON.



42 Sa 5982 (Elev. 1878m (6160 ft.)) The site is 50 meters north to south and 100 meters east to west. This lithic scatter is located on a ridge in sand and slickrock at the confluence of Dry Wash and Indian Valley, and 50 meters north of the south quad line. Deer trails and grazing evidence were observed in the badly eroded site area. The overstory is juniper-pinon with snake weed, ephedra, blue gramma, curly grass and yucca. Previous collection is manifest by the piles of flakes near claim markers. Lithics observed were flakes and cores, one serrated corner-notch projectile point, and one whole knife, approximately three by 10 centimeters. Cultural materials suggest possible Pueblo II activity.

42 Sa 5983 Elev. 1887-1902m (6190-6240 ft.) The habitation site spreads 200 meters north to south and 50 meters east to west in a loose, sandy mixture of alluvial and aeolian soils. It is situated on a ridge overlooking three drainages. The site has been virtually destroyed by erosion, vandalism, and a road which is cut through almost the entire length of the site area. Vegetation includes juniper-pinon with four-wing saltbush, ephedra, snake weed, prickly pear and yucca. Possible pit structures are indicated by three areas of depressions which exhibit soil discoloration and concentrated debitage. All depressions are badly vandalized. Three probable retouch stations have about 200 tertiary flakes per square meter and other areas of debitage exhibit 6-50 flakes per square meter. Other artifacts include three manos - one small oval, two round rectangular - and one slightly used basin metate. Pit structures and lack of ceramics may justify a possible Basket Maker II-III categorization of the site. Salvage excavation would be highly desirable here.

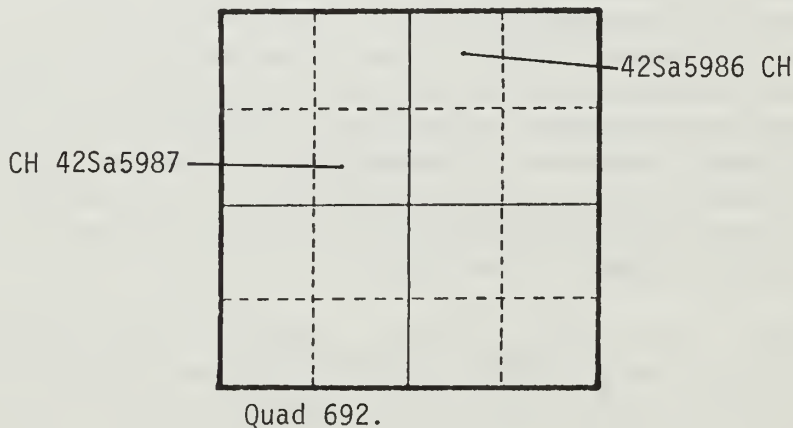
42 Sa 5984 Elev. 1890m (6200 ft.) The site covers 10 meters north to south and 20 meters east to west on a slope just above the base of some slickrock in a small, sand-filled cut. The view is into Dry Canyon. Erosion has had considerable impact. Dominant vegetation is juniper-pinon, along with snake weed and sage. Lithics were chert and quartzite detritus, indicating a possible manufacturing site. Materials available were not sufficient for further cultural determination.

42 Sa 5985 Elev. 1927m (6320 ft.) The three meters square site is located on the bank of a wash which drains the mesa top. The view is over the cliff into Indian Valley and down towards Dry Canyon. The site is eroded and there are signs of deer in the site area. The main vegetation is juniper-pinon with ephedra, bitter brush, and snake weed also present. Chert and quartzite flakes along with two knife fragments were noted. The materials present were not sufficient to determine a cultural affiliation.

Quad 692. (Sec. 7 SW 1/4, T31S, R25E) Of the two ecozones noted in the quadrant, the first is a mesa top at 7,000 feet which exhibits a thin, sandy soil that is heavily eroded. This covers 24% of the area. Roads have severely impacted the area while small gullies and sheet erosion has moved the cultural debris from two sites into the washes. These were extensive lithic scatters suggestive of prolonged use. The lack of tools among the flakes may be the result of local collecting. One point, an Abajo Stemmed,

Quad 692. (Cont.)

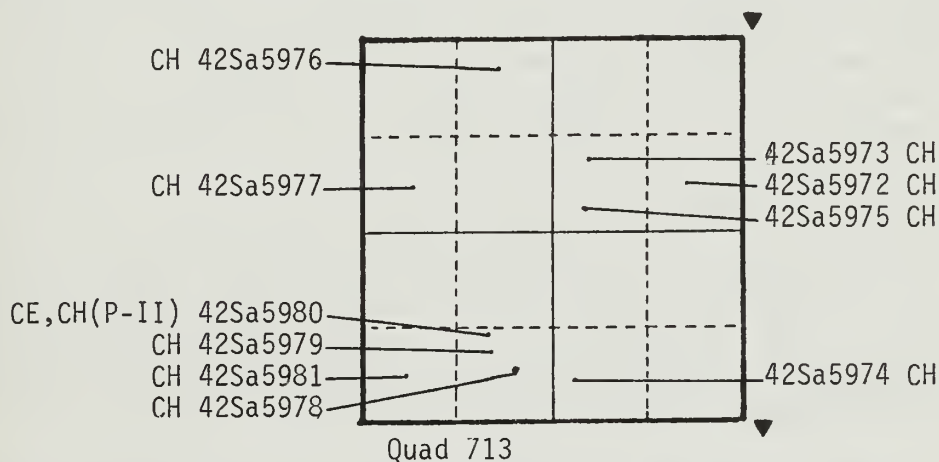
suggests a possible Pueblo I association. --- Zone 2 involves a talus slope and deep gully along the southern part of the quad. The lack of sites in this portion is doubtless associated with the severely eroded Morrison clay soil, the lack of lithic material, the lack of water or vegetation that mark the zone. (A corner marker was located one half mile away. Location established by compass march from that point.) JUNIPER-PINON.



42 Sa 5986 Elev. 2176m (7140 ft.) A large and extensive lithic scatter spreads 200 meters east-west and 120 meters north-south with a general aspect of 90° east. It occupies the edge of a mesa. Road and drill pad construction, sheet and arroyo erosion, and artifact collectors have heavily impacted the site. Vegetation includes heavy concentrations of juniper-pinon, with ephedra, blue gramma, and snake weed forming the understory. Several areas exhibit small piles of flakes, apparently the work of collectors. Cultural remains observed were primary, secondary, and tertiary chert flakes, a point fragment, and scrapers. The culture-period is indeterminate.

42 Sa 5987 Elev. 2164m (7100 ft.) This lithic site occupies an area of 230 meters east-west and 170 meters north-south. The site aspect is roughly southwest at 220°. The area is eroded into several pockets and is impacted by roads, drill pads, and collector activity. The area has a heavy juniper-pinon stand with ephedra, cacti, snake weed, and various grasses also present. Artifact collectors left piles of flakes in several areas. A few chert tool fragments were observed, but there was nothing culturally diagnostic.

Quad 713. (Sec. 31, NE 1/4, T31S, R25E) The quadrant is characterized by a series of sandstone and clay formations cut by a number of gullies. Two ecozones can be seen although they are distinguished mainly by the degree of slope and resulting erosion. The northeastern third of the unit is slightly less eroded because of the lower slope angle. Even then, erosion has exposed quartzite materials and some chert. Permanent water is scarce, but some seeps were located south of the quarter section. This region has suffered heavy impact from grazing and mineral exploration. The overstory involves a heavy stand of juniper and pinon with good amounts of bitter brush, yucca, and snakeweed. Four sites are recorded from this one third of the quadrant. The second two thirds of the unit is highly eroded and cut by gullies. Cover is in the form of a moderately dense juniper-pinon stand with grasses below though less dense than in the northern area. Five sites were found in the area, all lithic scatters. (Two markers were found.) JUNIPER-PINON.



42 Sa 5972 Elev. 2002m (6570 ft.) The small lithic scatter covers an area of two by two meters and faces south at 195°. It is located in a residual soil on a ridge line. Extreme erosion has nearly destroyed the site. The overstory is a moderate juniper-pinon stand, with small amounts of cacti, bitter brush, and ephedra below. Deer trails exist near the site in several small arroyos. The culture-period is indeterminate.

42 Sa 5973 Elev. 1975m (6480 ft.) The site occupies an area ten meters east to west and 20 meters north to south and faces north at 0°. The light lithic scatter is located in colluvial soils on a bench above an arroyo. The area has been severely impacted by erosion with some secondary deposition of cultural materials evident on the west side. The site occupies a small clearing in juniper-pinon with minor amounts of bitter brush and ephedra. Cultural materials consist of chert flakes and a single side-notch point suggestive of Southern Paiute or perhaps Southern Ute was found. Further culture-period designations cannot be made on the basis of other cultural materials found.

42 Sa 5974 Elev. 1962m (6440 ft.) The lithic scatter and possible source area for quartzite occupies an area ten by ten meters which faces southwest at 200°. The area is dominated by moderate juniper-pinon cover with yucca, snake weed and bitter brush also being present. The site is in badly eroded sand. Material remains include primary quartzite flakes and several nodules of raw material. A lack of diagnostic tools makes further cultural identification impossible.

42 Sa 5975 Elev. 1975m (6480 ft.) The area occupied by a possible hunting site is eight meters east-west and five meters north-south. It is cut by a small arroyo into two nearly equal concentrations. The lithic scatter is located on a bench terrace and faces south at 170°. A large boulder on the north side makes an effective wind break and numerous deer trails were noted near the site. Situated in a clearing in juniper-pinon the site also contains cacti, snake weed, curly grass and ephedra. Cultural materials consist of primary chert and quartzite flakes. No diagnostic tools were located to make cultural affiliation possible.

42 Sa 5976 Elev. 1975m (6480 ft.) Lithics are scattered over a three meter square on a bench terrace which faces south at 175°. Erosion has exposed a coarse sand and quartzite pebble matrix. The area is dominated by juniper-pinon with bitter brush also present. Due to the severe erosion, cultural materials now remaining are limited to a few quartzite primary flakes and no diagnostic tools. Culture-period is indeterminate.

42 Sa 5977 Elev. 1901m (6240 ft.) The site, a lithic scatter, occupies an area of ten by ten meters facing southwest at 250°. The soil of the bench or terrace is a fine alluvial sand and clay. The site is in fair condition, but has been impacted by the headward erosion of a small arroyo. The area contains moderately dense juniper-pinon, underlain by snake weed and ephedra. There is a good concentration of primary and secondary chert and quartzite flakes, but only one knife fragment was seen. Culture-period indeterminate.

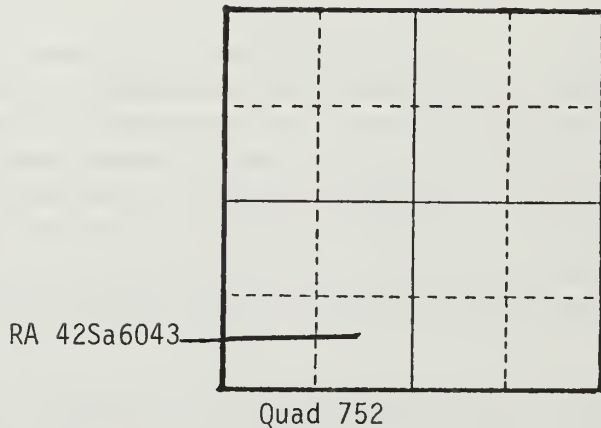
42 Sa 5978 Elev. 1902m (6240 ft.) A small, but intensive manufacturing site, occupies an area four by four meters. The site slope is down to the southeast with a 3° slope on a rocky colluvial talus. Erosion has partially destroyed the site which is situated in a moderate juniper-pinon cover. Snake weed and ephedra are also present. Material remains consist of numerous quartzite flakes. A lack of diagnostic tools makes further cultural identification impossible.

42 Sa 5979 Elev. 1889m (6200 ft.) An intensive lithic scatter occupies an area 60 meters north-south by 40 meters east-west which faces southwest at 220°. The area, a bench terrace, composed of fine, sandy soil is cut by several furrow-type arroyos. The vegetation is a moderate juniper-pinon stand with ephedra and snake weed also present. An active seep is located about 50 meters to the northeast. Several tools were collected, mostly knife fragments and scraper types. No diagnostic cultural materials were recovered.

42 Sa 5980 Elev. 1889m (6200 ft.) The site is a long, narrow lithic scatter associated with an active seep. The area involved is 14 meters east-west by 40 meters north-south with a southwest aspect at 210°. The site is on a narrow bench paralleling the seep run. Erosion and considerable deer movement have severely impacted the site. The soil is a sandy clay with a few grass bunches and bitter brush. Some juniper and pinon exist to the north and west of the site. A point fragment and chert detritus were observed. A single Mancos B/W sherd suggests a Pueblo II occupation.

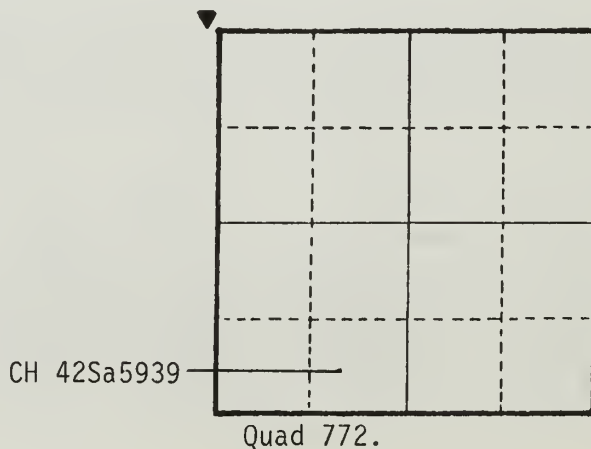
42 Sa 5981 Elev. 1874m (6150 ft.) The area occupied by this lithic scatter is 20 meters north-south by 40 meters east-west with a southerly aspect at 185°. Site 42 Sa 5979 is directly north and one terrace above this site which is on the first terrace above East Canyon Wash. The area has numerous arroyos which have caused extensive erosion of the site. Sparse juniper-pinon cover occurs along with broad and narrow leaf yucca, snake weed and blue gramma. The soil is a loose sandy clay. A few knife fragments were noted, but no diagnostic artifacts were observed.

Quad 752. (Sec. 30SW 1/4, T31S, R21E) The most salient feature of this unit is the head of a small canyon which is tributary to Lavender Canyon. The upper end of the tributary is located near the center of the northern half of the quadrant with the drainage flowing down to the southeast. The mesa top of the western half and the northern edge of the unit reaches just under 1828 meters (6000 ft.). The side canyon entrenches into this to a depth of some 122 meters (400 ft.). The canyon and its talus slopes cover about 35% of the area while the mesa top accounts for the balance. The overstory is dominated by bitter brush while curly grass and snake weed are also present. A single site was identified on a bench on the mesa top. (No marker found.) DESERT SHRUB.



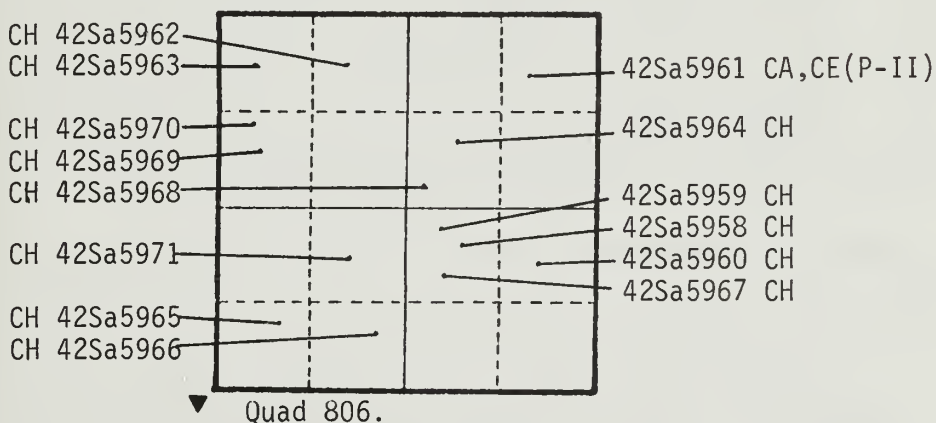
42 Sa 6043 Elev. 1609m (5680 ft.) A small petroglyph panel facing south and located on a vertical stone face on bench land with a brush overstory of bitter brush, curly grass, snake weed and yucca. No cultural assignment can be made on the basis of the designs noted.

Quad 772. (Sec. 24 SE 1/4, T29S, R22E) The quadrant is covered entirely by an open sage brush flat composed of sandy soils. A hill flanks the western side of the area but it is terminated by a wash running east to west across the northern end. A few junipers grow along the drainage but they do not dominate even the area in which they grow. A single flaking site, five meters square, was the only cultural source identified in a level brush covered area. (No markers were found but a pipe without a cap was found at the center of the section, and hence at a corner of the quad. Triangulation on major features in the area supported the view that this was a marker.) DESERT SHRUB.



42 Sa 5939 Elev. 1731m (5680 ft.) An extensive area of core shatter argues the site use was limited to the preparation of cores. Facing east at 105°, the site is located in a sand blown area which reveals a number of slickrock ridges. Water is 0.8 km to the west. Main vegetation is sage brush, grasses and saltbush. The site was probably utilized for only a short time. Lithics are confined to core shatters of native white chert. Culture-period indeterminate.

Quad 806. (Sec. 22 SW 1/4, T31S, R24E) Two environmental zones dominate this unit. The first, covering 75% of the area, is based upon an aeolian soil rapidly eroding to beds of sandstone, limestone, and chert. The area is covered by a moderately heavy juniper-pinon stand with an understory of ephedra, bitter brush, sage, yucca, and cacti. Some grazing is evident but it has been light due to the limited grass and the rocky nature of steep slopes in the area. A total of 13 chipping sites were found in the area in association with natural chert sources. --- The second zone covers the remaining 25% of the quarter section and consists mainly of flat alluvial waste and bench areas in the north-eastern portion of the unit. It has been grazed rather heavily as grasses are more abundant here. Juniper and pinon grow in some numbers but the stand is much more open. The thicker and deeper soils found in some of the wash and canyon areas produce large stands of sage and rabbit brush. One site recorded in this area extended into the first zone as well. (A marker was found on a hillside.) JUNIPER-PINON.



42 Sa 5958 Elev. 1884m (6180 ft.) The site is six meters square and is located on a small bench east of the main wash in an open area surrounded by juniper and pinon. The main lithic concentration is in a small wash. Other vegetation includes bitter brush

42 Sa 5958 (Cont) and ephedra growing in colluvial soil. The site overlooks two minor arroyos and is somewhat eroded. One deer trail was noted. Primary flakes and a few tools, including three knife fragments and two scrapers, are present. Although raw material is lacking; the cultural debris indicates a possible manufacturing site. No further cultural determination is possible from the materials observed.

42 Sa 5959 Elev. 1875m (6150 ft.) The site is a lithic scatter running three meters north to south and five meters east to west. It sits on a bench overlooking two washes: the main canyon wash is 20 meters to the west. The soil is a residual red clay which contains many pebbles. Vegetation is dominated by juniper and pinon along with snake weed. Deer trails can be seen on both sides of the canyon washes while erosion is evident in the site area. Small primary flakes of gray and white chert and quartzite suggest that this is a butchering site, but the absence of diagnostic tools prevents cultural identification.

42 Sa 5960 Elev. 1865m (6120 ft.) The lithic scatter is crescent shaped with the open side facing south. The entire scatter is 50 meters wide and 30 meters long. The site sits on a ridge between the main wash and a minor arroyo. The area has a commanding view of the East Canyon Wash and two minor washes, while it faces cliffs to the east and a rolling talus and flood plain to the west. The soil is rocky, being heavily impregnated with sandstone and cobbles form a conglomerate formation which appears to be the source of material for chipping. The vegetation is dominated by juniper and pinon with bitter brush, ephedra, and snake weed also present. The observed lithics were primary and secondary chert flakes and primary quartzite flakes. Several tools were collected but were not sufficiently diagnostic to make a culture-period determination.

42 Sa 5961 Elev. 1835m (6020 ft.) This probable quarry site, 75 meters north to south and 100 meters east to west is situated on a bench looking East into a canyon mouth and also overlooking the fault near East Canyon Wash. The entire mountain to the south of the site is covered with raw materials of chert and quartzite. This is a combination prehistoric-historic site distributed over two vegetation zones. Juniper and pinon predominate in the southwest portion of the site, while sage flats with cheat grass and four-winged saltbush dominate the northeast portion of the site area. The modern mine camp has been placed on a large prehistoric quarry. There has been

42 Sa 5961 (Cont) considerable disturbance by machinery in some areas as well as by erosion. Several deer trails are evident on the slopes. The sherds that were observed were all located in a one meter square and may have been brought in recently along with historic trash. The site shows only chert flakes and no prehistoric tools which could be culturally diagnostic. If the sherds "belong" to this site, the three identified as Mancos B/W would assign a Pueblo II culture period---between 950 and 1100 A. D.

42 Sa 5962 Elev. 1847m (6060 ft.) Situated at the base of a talus slope between two arroyos, the site is 100 meters north-south and 30 meters east-west, although some lithic debris spills beyond this into a wash on the west. The area overlooks the flats around East Canyon. The sandy soil is a residual alluvial type containing no lithic resources, although some can be found in the west wash. Up the wash to the west about 100 meters are four large cottonwoods which argue considerable moisture and a possible seep. The vegetation includes small juniper and pinon along with sage brush, snake weed, curly grass, and narrow leaf yucca. The site has been disturbed by erosion and grazing as well as by vandalism. Lithics observed are white, gray, and pink chert flakes and white quartzite flakes. The flakes, mainly secondary, were found in a density of about eight flakes per square meter. Several nodules of chert and two scrapers were observed but the culture-period remains indeterminate.

42 Sa 5963 Elev. 1853m (6080 ft.) The lithic site is 70 meters north to south and 100 meters east to west on a bench in a box canyon. A rock ledge borders on the southeast, a deep arroyo on the west, and a gradual slope drops to the north. The site affords a north view onto the flats of East Canyon Wash. The soil is alluvial and eroded. Juniper and pinon, cottonwood, ephedra, bitter brush, narrow yucca and several grasses comprise the vegetation. Lithic detritus and a few tools indicate a possible kill or butchering site, but materials are not sufficient for further cultural identification.

42 Sa 5964 Elev. 1859m (6100 ft.) The site, 60 meters north to south and 50 meters east to west, is situated on the west talus slope looking into a flat alluvial plain to the north. The site area itself is in a small pocket cut out by erosion. A terrace extends to the east. The colluvial soil of the site has been disturbed by grazing. The main vegetation is juniper and pinon, with sage brush, rabbit brush, and broad leaf yucca also present. Lithics observed were chert and quartzite flakes as well as several nodules. Cultural identification remains impossible.

42 Sa 5965 Elev. 1966m (6450 ft.) Lithic material scattered 80 meters north to south and 40 meters east to west comprise the site. It is located on broken terrain cut by a small arroyo. The colluvial soil is eroded and deer trails are common. While juniper and pinon comprise the main vegetation, bitter brush and ephedra are also present. Three concentrations of lithic scatters with some flakes in between them were noted. One area contains the source materials while the other two are small chipping stations. The lithics observed were mostly debitage and a few tool fragments, but these were not sufficient to facilitate cultural identification.

42 Sa 5966 Elev. 1926m (6320 ft.) The lithics are scattered over a ten meter square which is located on a small ridge along a bench at a point which overlooks the canyon. The soil is a sandy alluvium which is eroded because of the slope and the arroyo drainage. The vegetation is dominated by a juniper-pinon stand but bitter brush and ephedra are also present. The lithics are confined mostly to primary flakes of brown and gray chert. One scraper was noted but materials were not sufficient for cultural determination.

42 Sa 5967 Elev. 1908m (6260 ft.) The site is seven meters square and is located on a terrace between the cliffs of a canyon floor. The eroded soil is a pink sand. Deer tracks are numerous in the area. Vegetation is juniper-pinon with an understory of narrow leaf yucca, sage brush, wheat grass, bitter brush, and blue gramma. Lithic materials include brown and gray chert flakes and one scraper. The site is a possible manufacturing area but the materials observed are not adequate for further cultural determination.

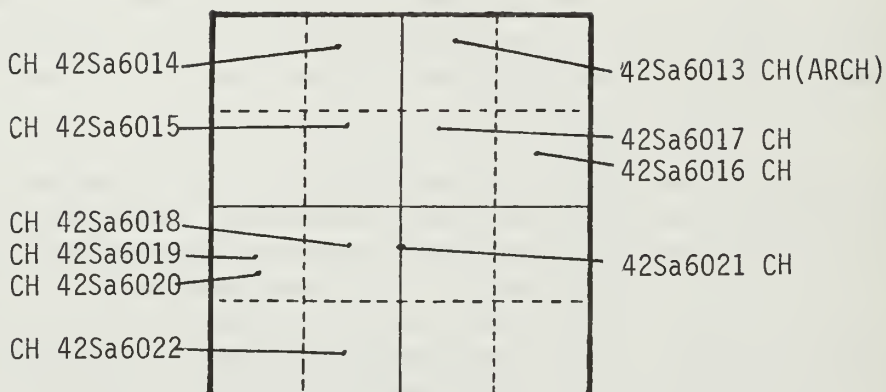
42 Sa 5968 Elev. 1969m (6460 ft.) This site is 150 meters north-south and 70 meters east-west. It is a lithic scatter located on a ridge cut by numerous arroyos. Deer trails and evidence of erosion are prominent on the colluvial soil. Vegetation is juniper and pinon along with snake weed and ephedra. Lithic material is confined to primary flakes of chert and to large quantities of quartzite. Nothing is sufficiently diagnostic to permit a cultural assignment.

42 Sa 5969 Elev. 1859m (6160 ft.) The lithic site is five meters square and was found on a bench in a saddle. The view looks over cliffs into a valley and box canyon. There are a few deer trails around the site and erosion is moving the colluvial soil. Juniper and pinon comprise the main vegetation along with narrow and broad leaf yucca, snake weed, and ephedra. The small quantity of chert flakes was not sufficient for cultural determination.

42 Sa 5970 Elev. 1914m (6080 ft.) The lithic scatter is three meters square and located on a ridge slope looking into East Canyon Valley. The soil is colluvial and eroded. Vegetation is juniper and pinon as well as bitter brush and ephedra. Lithic materials are primary gray chert flakes. Two tools were also found. This may be a kill site, but materials are not sufficient to make further cultural determination.

42 Sa 5971 Elev. 1935-1950m (6350-6400 ft.) The site is 20 meters square and is located on a bench in a nearly level area between two arroyos. There is a large wash to the west with a secondary lithic concentration. The area also looks into East Canyon Wash and the flat has the effect of forming a small basin against the cliff. The colluvial soil is eroded. Vegetation is mainly juniper and pinon with snake weed, bitter brush and ephedra forming the understory. Lithic materials observed include chert debitage and several tools which were not sufficient to facilitate cultural identification.

Quad 1001. (Sec. 35 NW 1/4, T29S, R25E) The quadrant area is essentially a sandstone bench cut by large washes, each with minor tributary gullies. Some flats covered with a shale-like material are seen in the northeastern section. The major washes have cut deep cliff faces in the sandstone while the gullies have cut into the soil and shale to form several acres of gently rolling ridges. Some chert material is exposed in the northeast. --- The first zone, covering some 10% of the quadrant, is a flat terrace on the west side of the quad. Although now chained, it was a moderately dense juniper-pinon forest now seeded to crested wheat grass. Two sites were recorded here. --- Zone two, covering some 15% of the quad, is the flat bottom of the canyon and the adjacent talus slopes. A moderately dense juniper-pinon overstory covers both the slopes and the canyon bottom with sage, snakeweed, ephedra, and bitterbrush as an understory. Erosion here has been accelerated by heavy grazing. Three sites were located in this element. --- In zone three a heavy juniper-pinon forest grows in soil that is badly eroded to expose shale and sandstone. Very limited grass, some yucca and cacti complete the floral catalog. No sites were found in this area which accounts for 25% of the quarter section. --- A heavy juniper-pinon growth accompanied by some grasses and yucca dominate the fourth area which accounts for 25% of the total. Four sites were found in this zone in a fairly flat area near the edge of zone five. In zone four, meanwhile, the gradients are more gradual, the erosion less, and the soil is deeper. --- The final ecozone covers some 25% of the quadrant. Here the top soil is in place, sage is abundant along with rabbit brush and grass. No sites were found. Deer trails, coyotes, rodents, predatory birds, and doves were noted. (Corner marker appears to have been removed during chaining. The corner was calculated by triangulation on topographical features.) JUNIPER-PINON.



Quad 1001.

42 Sa 6013 Elev. 1926m (6320 ft.) The area of lithic concentration is 30 meters north-south by 40 meters east-west. It is situated on a slope facing south at 180° . The slope angle varies from 2 to 7° . Soil is thin and lies over bedrock which has resulted in considerable erosion and secondary deposition of lithics in washout pockets. The area has a moderately dense juniper-pinon stand with sage brush, bitter brush, snake weed, and ephedra present. There are several detritus concentrations, mostly of chert. A knife and a corner-notched point were collected. The area may have been a hunting site. The point suggests a possible Pueblo I-II activity.

42 Sa 6014 Elev. 1923m (6310 ft.) A light lithic scatter was found in an area about 20 meters square on a terrace above an arroyo. The soils are eroding to the south at 190° . Extensive erosion has caused secondary deposition of flakes at the site. The site is in an area with a moderately dense juniper-pinon overstory with sage brush, snake weed, and various grasses also present. Cultural material is mostly secondary chert detritus. No diagnostic tools were present.

42 Sa 6015 Elev. 1920m (6300 ft.) The site area is about 20 meters east-west by 100 meters north-south and it occupies a point at the confluence of two large washes. Soils where the lithics lie are shallow and have eroded to the east, exposing bedrock and concentrating cultural materials in several pockets. The area has also

42 Sa 6015 (Cont) been chained. Flora originally consisted of juniper and pinon but now saltbush, sage brush and snake weed dominate. The lack of diagnostic tools and the presence of piles of flakes and historic trash argue possible vandalism by historic users of the area. The remaining cultural material consists of a green, chert-like stone. Cultural determination was, of course, impossible.

42 Sa 6016 Elev. 1950 m (6400 ft.) A light lithic scatter is spread over an area of 40 meters east-west by 75 meters north-south on a slope facing west at 270°. The slope is washing into an arroyo and it has also been collected by surface hunters as is evidenced by several piles of flakes. The soil is a fine clay which supports a moderate juniper-pinon overstory. Sage brush, snake weed, and curly grass are also present. Cultural material consists of chert and a highly metamorphized limestone, mostly in the form of primary flakes. The lithics observed were not sufficient for cultural determination.

42 Sa 6017 Elev. 1938m (6360 ft.) A small lithic scatter occupies an area ten meters square on a slope facing southwest at 240°. The soil is a fine sandy clay which is somewhat eroded at the south end of the site. The site is located within a juniper-pinon stand at the end of a sage flat. Cultural material consists of chert primary flakes only. As such, the material does not make cultural identification possible.

42 Sa 6018 Elev. 1926m (6320 ft.) The site area is ten meters east-west and 20 meters north-south and is located on a slope facing southwest at 220°. The small lithic scatter occurs in a sand-clay soil on a terrace which has been subjected to considerable erosion. The site is in a former juniper-pinon forest, now chained. Crested wheat grass and sage brush now dominate the area. Cultural material consists of some two dozen primary flakes of chert with no diagnostic items evident.

42 Sa 6019 Elev. 1926m (6320 ft.) A light lithic scatter occurs in a 30 meter square area on a second terrace above a major canyon. The soil is a fine sandy clay which is heavily eroded. Erosion has concentrated a few flakes of the scatter in pockets. The site area has also been chained. Formerly a juniper-pinon stand, the area

42 Sa 6019 (Cont) now has crested wheat grass and sage brush in the flat. Cultural material consists mostly of primary chert flakes although a few tool fragments were collected. The material is not adequately diagnostic to facilitate cultural determination.

42 Sa 6020 Elev. 1926m (6320 ft.) The lithic area occupies a 30 meter square located in a sandy soil on the second terrace above the floor of a large canyon. The site faces southeast at 120°. The area has been chained. Located, thus, in a former juniper-pinon zone, the site area is now seeded in crested wheat grass which is associated with cacti and sage brush. The remaining material is mostly chert flakes with a few quartzite flakes. One point and a knife, both lacking bases, were collected. Cultural determination was not possible due to the lack of diagnostic materials.

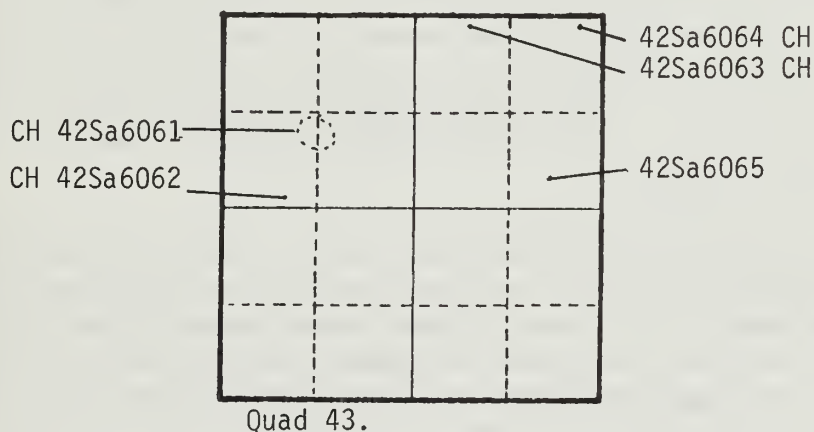
42 Sa 6021 Elev. 2048m (6370 ft.) A large, intensive lithic scatter is about 60 meters square. In three areas the lithic density is in excess of 20 flakes per square meter. The site is located in sandy soil on a point overlooking a major wash and it faces northeast at 40°. Some erosion has occurred. Flora includes a light juniper-pinon stand with sage brush and snake weed also prominent. To the east is a large sage flat. The cultural materials were mostly a gray chert and a fine-grained, green stone that has not been identified. The site lacked cultural diagnostic materials.

42 Sa 6022 Elev. 1926m (6320 ft.) A large but light lithic scatter occupies an area 70 meters east-west by 120 meters north-south on a terrace overlooking a major wash. The slope of the site is generally down to the west while the soil is a shallow, sandy clay with considerable erosion in the southwest quarter of the area where some bedrock is exposed. The site is located just within a light juniper-pinon stand with sage brush, cacti, and snake weed also present. A large sage flat is located east of the site. Artifact density rarely exceeds four flakes per square meter, but several tool fragments occur, including scrapers and knives. Material remaining includes various sizes of chert and quartzite flakes. Tool fragments were insufficient for further cultural identification.

CASTLE VALLEY PLANNING UNIT

Quad 32. (Sec. 34 NW 1/4, T24S, R22E) The quad has two distinct ecozones divided by a cliff face 1200 feet high. Some 70% of the quarter section is located in the Colorado River bottoms and is composed of clay, steep talus slopes and cliff faces. The second and higher element within the area is on the south bench of the river canyon. This mesa top is covered with a thin stand of juniper and pinon with a saltbush understory. No sites were found. (Marker was not found and position affirmed by triangulation on landmarks.) BARREN WASTE.

Quad 43. (Sec. 22 NE 1/4, T27S, R23E) Two juniper-pinon-covered slopes dominate the east and west sides of the quadrant and comprise about 25% of the total area. These two segments are divided by Pack Creek along which are found actual sage-covered river bottom lands accounting for 35% of the area and sage brush flats which cover 40% of the land. Two large chipping sites were found in the bottoms where exposed quartzite and chert secondary deposits were utilized. Two small chipping stations were found on the east ridge and the fifth, an apparent hunting station, was found in the sage near the edge of the creek. (No section markers were found--apparently lost to erosion in the area. Triangulation on local topographical features and on a ranch house marked on the map were used.) SAGE BRUSH.



42 Sa 6061 Elev. 1780m (5840 ft.) Measuring 300 meters north-south and 70 meters east-west, the site is situated on fairly level alluvial soil between two washes which converge just to the west to form Pack Creek. Site slope is generally down to the southwest at no more than 2°. The site area is in juniper-pinon woodland although the actual site is dominated by sage brush with some prickly pear. Cultural debris included primary and secondary flakes, a core and a knife fragment. None of these chert materials proved diagnostic.

42 Sa 6062 Elev. 1780m (5840 ft.) A lithic scatter and probable chipping site that extends for 80 meters east-west and 40 meters north-south. The ground slopes at about 2° to the west. Pack Creek runs past the northern edge of the site, flowing from east to west. The residual soils are eroding only slightly. The rather open juniper-pinon stand has an understory of sage brush and saltbush. The primary and secondary chert flakes naturally proved to be non-diagnostic.

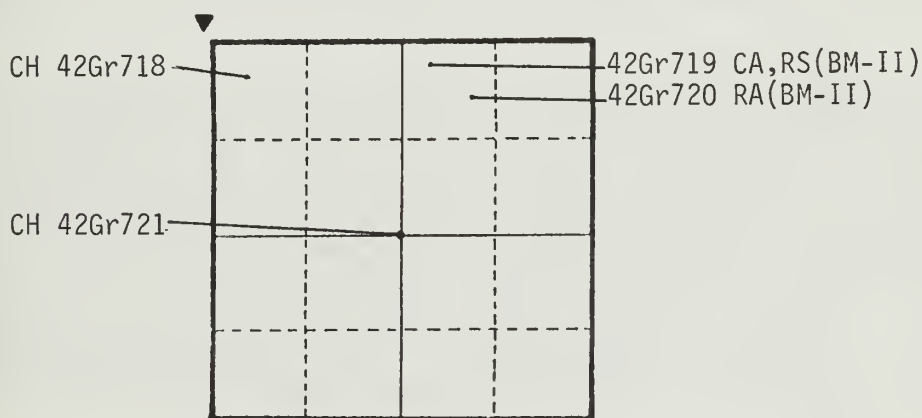
42 Sa 6063 Elev. 1877m (6160 ft.) This very small chipping site covers only one square meter, a fact perhaps dictated by the fact that the site is located on a high point on a razor back ridge no more than 10 meters wide with a slope of about 3°. The residual soils are undisturbed while an open juniper-pinon stand is underlain by sage brush, rabbit brush, cactus and ephedra. The site produced four flakes and a mid-section fragment of a knife. Thus, no cultural determination is possible.

42 Sa 6064 Elev. 1902m (6240 ft.) The chipping site is contained within a 3 meter square and is located atop the same razor back ridge upon which Sa 6063 is located. East of the site is a large vertical drop marking the end of the ridge while to the north and south the ridge drops steeply at about 40°. Slope of the area to the west is about 8°. The broken and rock terrain contains residual soil which has eroded some as the result of grazing by both deer and cattle. An open juniper-pinon stand is accompanied by an understory of sage brush and ephedra. The primary and secondary chert flakes provided no diagnostic evidence.

42 Sa 6065 Elev. 1829m (6000 ft.) This camp site occupies an 8 meter square with a 2° slope of the residual soil down to the south. The actual site area is nearly level in an area which overlooks Pack Creek to the south. The undisturbed site is in a juniper-pinon clearing where the flora includes sage brush and prickly pear. The cultural material included primary and secondary flakes, a knife and a point fragment and a small mano. Cultural identification was not possible.

Quad 47. (Sec. 10 NW 1/4, T25S, R23E) The quadrant is dominated by the massive Castle Rock which intrudes into the area on the east. About 94% of the unit is covered by Castle Rock and its associated talus slopes and benches. The remaining 6% of the area is covered with sage flats characteristic of Castle Valley. The flats and the terraces between the talus slopes produce a land area of some 50 acres with a 15° slope while the balance inclines at 75° or better. No sites were found. (Marker located. USGS crew working in area during the survey.) BARREN WASTE.

Quad 115. (Sec. 27 NW 1/4, T26S, R21E) This quarter section divides into four ecozones. First, and covering only 3% of the area, is a canyon bottom with a seep. The area has various grasses, scrub oak, etc. No sites but many game trails. --- A second zone is composed of talus slopes and cliff face areas covering 20% of the total area. Here are found scattered juniper and pinon, cliff rose, bitterbrush, some blackbrush, ephedra and occasional cacti. Two sites are found here: a possible Basketmaker site in an alcove and a nearby petroglyph that 'matches'. --- Covering 27% of the unit is a brush flat that includes some grass, ephedra, and an occasional juniper or pinon. Soils are shallow and contain some chert nodules which account for two chipping sites found. --- Finally, about 50% of the quadrant is covered by slickrock mostly in the form of sandstone domes and flat rock outcrops with small pockets of sand in which a juniper or pinon might grow in company with some ephedra. No sites here. (Marker located on cliff edge.) BARREN WASTE.



Quad 115.

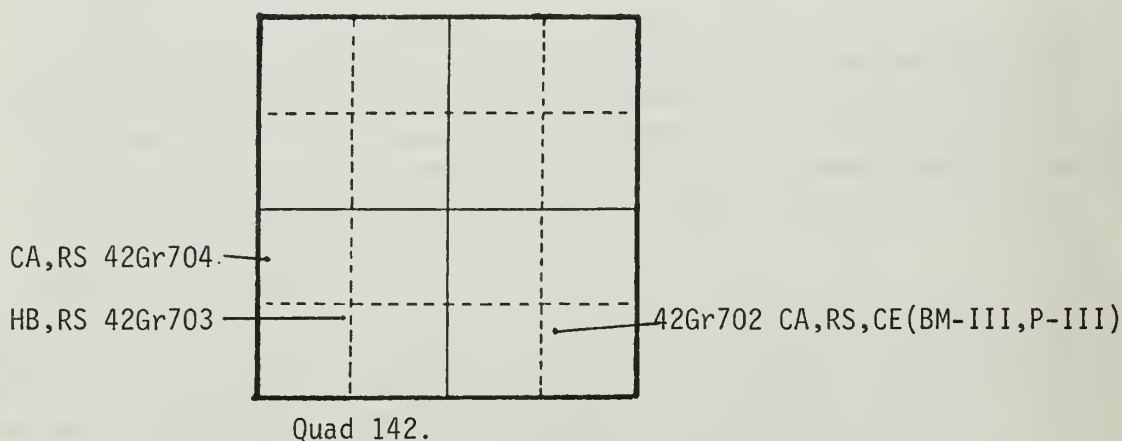
42 Gr 718 Elev. 1317m (4320 ft.) A lithic site that appears to have been a resource area. Covering a 100 meter square on the mesa top residual soils, the site slopes down to the SW in a vegetation zone which includes curly grass, snake weed, ephedra, and prickly pear. Cultural debris is restricted to chert nodules, cores, and primary flakes--none of which are diagnostic.

42 Gr 719 Elev. 1341m (4400 ft.) Under an overhang at the head of a talus slope, the site measures 40 meters east-west and 5 meters north-south. The site faces due south while the ground in front of the shelter area slopes down at 2°. The site has been severely vandalized very recently. The dirt piles reveal considerable charcoal, suggesting that the site may have good depth. While gray and white chert flakes found here were not diagnostic, the possible depth suggests that it might be a Basket Maker II site--but this cannot be regarded as anything more than a suggestion at this point.

42 Gr 720 Elev. 1341m (4400 ft.) A petroglyph site with a panel no more than 40 cm square on a vertical face of a ledge. The pecked designs include a complete anthromorph and one that is partially complete. The panel faces due south overlooking an expanse of sage brush and cheat grass. The trapezoid body style suggests a possible Basket Maker II or III origin.

42 Gr 721 Elev. 1390m (4560 ft.) This site extends for 25 meters east-west and 10 meters north-south on the residual soil of a mesa top near a large sandstone dome. The site slopes down at 5° to the SW and some erosion has followed along this route. The brushland vegetation includes black brush, ephedra, juniper, curly grass, prickly pear and snake weed. The white chert primary, secondary, and tertiary flakes proved to be non-diagnostic.

Quad 142. (Sec. 5 SW 1/4, T25S, R23E) The unit is characterized by a massive cliff face and associated talus slopes which relegate two thirds of the quarter section to the wasteland category. The remaining one third of the quadrant is fairly level flats above the river bottoms dominated by saltbush. The level terrain is dotted with very large boulders that have broken away from the cliffs above and all three sites in the unit were rock-shelters formed under these boulders. They might be called "free standing shelters". Two small shelters had flakes in association while the other had ash areas, a metate and some sherds. (A marker pipe was located although the brass cap was gone. Verified by topographical triangulation.)
DESERT SHRUB.

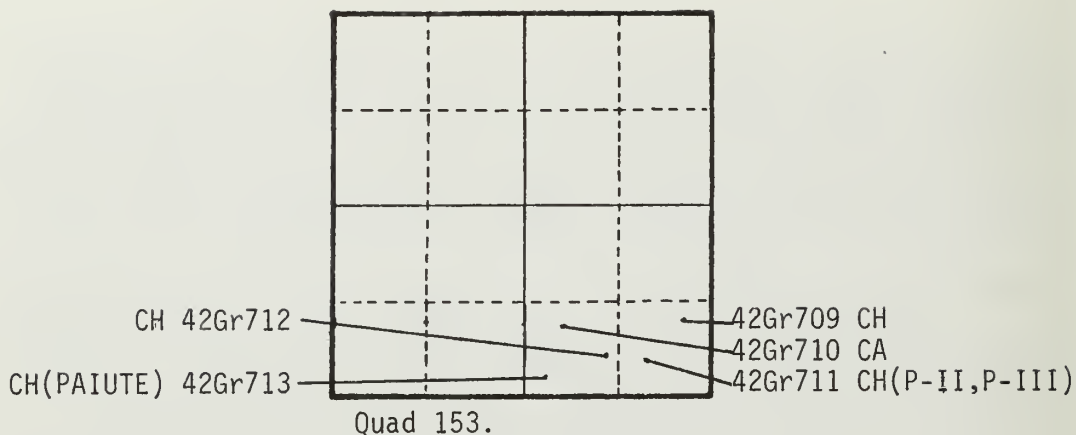


42 Gr 702 Elev. 1438m (4720 ft.) The site is what is sometimes referred to as a "freestanding" rockshelter. That is, the shelter is under a portion of a large rock that has fallen from higher ledges. The shelter faces SE as the ground slopes down at 4°. The brushland flora is dominated by saltbush, sage brush and rabbit brush. The soil appears to be alluvial. The cultural material associated with the shelter includes a basin metate and mano and 4 charcoal darkened areas. Some chert primary and secondary flakes, a hammerstone, a core are the total lithic component. Ceramics include 2 sherds of Chapin Gray, 1 Mesa Verde Corr., and 2 unidentified corrugated sherds. While the sherd count is very small, it is, of course, entirely possible that the shelter was first used in Basket Maker III or Pueblo I times and then again some time during the Pueblo III period.

42 Gr 703 Elev. 1414m (4640 ft.) This possible habitation site is a rockshelter facing NE in a zone dominated by saltbush, scrub oak, sage brush and rabbit brush. The alluvial soil slopes down away from the shelter at about 3°. At one end of the shelter was rough laid masonry with neither shaping of the stone or chinking to produce either a semi-permanent habitation or at least a camp site. Modern users have piled sage brush against the wall. It is possible that a second wall covered the other end of the 3 meter front of the shelter as well. Three secondary flakes and a mano fragment failed to provide the diagnostic evidence needed to make a cultural assignment.

42 Gr 704 (Elev. 1414m (4649 ft.) This small rockshelter also located on alluvial soil has been heavily disturbed by cattle, apparently seeking shelter. Vegetation is saltbush, grease wood, scrub oak and rabbit brush. The shelter faces SW with a gentle slope dropping down in front of it at a rate of no more than 1°. The shelter, which commands a view of Castle Valley has not been modified by walls. Lithics were confined to white chert secondary and tertiary flakes which produce no data significant to cultural identification.

Quad 153. (Sec. 18 SE 1/4, T24S, R25E) The quadrant is divided between a relatively flat juniper-pinon zone and a wasteland region of cliffs and talus slopes. The juniper-pinon stand is moderately dense with occasional small clearings. It covers 80% of the quarter section. The trees crowd out much of the understory. All five sites were found in this area. --- In the wasteland region the talus is very steep and the cliff face deeply incised. (No marker found. The area chained and cut by roads and a drill pad. Location established by triangulation on topographic features.) JUNIPER-PINON.



42 Gr 709 Elev. 1706m (5600 ft.) A lithic scatter measuring 10 by 15 meters and located on a bench with a 4° slope down to the south. The coarse red sand has a juniper-pinon overstory with snake weed the major plant in the clearing. Recent use is attested by the presence of tin cans and a few bottles (none of which are old.) The badly eroded site produced only primary and secondary flakes of chert and a sandstone slab that appears to have a grinding surface on one side. The cultural affiliation remains indeterminate.

42 Gr 710 Elev. 1706m (5600 ft.) This probable camp site is limited to a 4 meter square. The site is in residual soil on a bench which slopes down to the E at 5°. The juniper-pinon overstory is underlain by a vegetative community that includes ephedra, black brush, yucca, curly grass, and snake weed. The ash lens has thus far escaped the erosion that is affecting the flake scatter. A few chert and one quartzite primary flakes were insufficient to suggest cultural affiliation.

42 Gr 711 Elev. 1703m (5590 ft.) This 4 by 6 meter lithic scatter is located in broken terrain covered with residual soil that slopes down to the south at 7°--a fact which has resulted in heavy erosion in the area. The dominant juniper-pinon overstory is associated with sage brush, prickly pear, snake weed, curly grass, rabbit brush. Lithics were confined to chert secondary flakes except for a side notched point found near the edge of the site area. Survey team members suggest it indicates a Pueblo II or more possibly, a Pueblo III affiliation, but this should be regarded as highly tenuous.

42 Gr 712 Elev. 1703m (5590 ft.) Site is a small scatter of secondary white chert flakes contained within a 2 meter square. The surface of residual soil slopes to the south at a mere 1° although there has been a considerable amount of erosion. Juniper and pinon are found here with ephedra and curly grass. No cultural identification was possible.

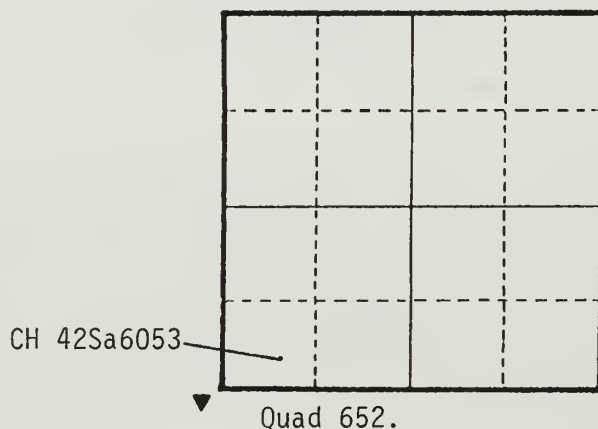
42 Gr 713 Elev. 1706m (5600 ft.) An intensive lithic concentration limited to a 1.5 meter square located on broken terrain with a 2° slope down to the SE. The juniper-pinon woodland domination of the area is supplemented by sage brush, yucca, and snake weed. The white tertiary flakes produce 2 projectile point bases which might suggest either Pueblo II use or later Ute--but such a conclusion is provisional at best.

Quad 209. (Sec. 24 SE 1/4, T24S, R25E) The quad is divided between a juniper-pinon zone covering 92% of the area and a wasteland area of slickrock and cliffs accounting for the balance. The juniper-pinon segment divides into three basic sub-zones. The first is mesa top where the understory includes Indian ricegrass, curly grass, and ephedra. The second is a talus area with curly grass, cacti, sage, and rabbit brush beneath. The third portion involves lower rolling hills where the understory is sage and cheat grass. --- The slickrock wasteland is vertical, heavily incised by runoff and has very little vegetation. No sites were recorded in the quad. (Corner pipe located but cap is missing. Verified by triangulation on topographic features.) JUNIPER-PINON.

Quad 269. (Sec. 35 NW 1/4, T24S, R24E) The quadrant is contiguous with Quad 270 (see below). The quarter section was initially a level area that has been subjected to accelerated erosion by grazing and by Onion Creek. Wastelands of eroded wash beds comprise 60% of the area while sage brush flats account for 15%. A light juniper-pinon overstory covers the remaining 25% and it acts as a sort of intermediate zone between the wasteland and the brush flats. No sites were recorded. (Corner markers not found. Areas where they should occur were eroded. Good lines were run, however, from the two markers found in Quad 270.) JUNIPER-PINON.

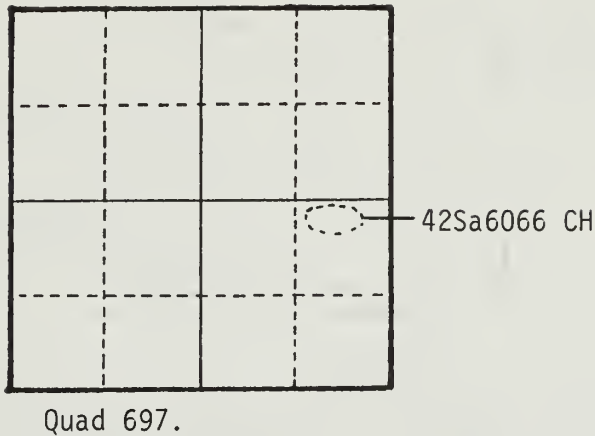
Quad 270. (Sec. 35 NE 1/4, T24S, R24E) The unit overlies a flat valley floor that has been heavily eroded by the head of Onion Creek. Eroded wasteland areas cover 55% of the quarter section. Juniper-pinon stands account for only 10% of the area and the zone is limited to the higher slopes of the wash and to the edges of the brush flats which cover the remaining 35%. The brush areas have been plowed to foster the growth of grass. Two small mano fragments were noted but no sites were recorded in the section. (Two corner markers located.) JUNIPER-PINON.

Quad 652. (Sec. 9 SW 1/4, T27S, 22E) Of the three zones in the quadrant, a wasteland of slickrock and domed sandstone accounts for 30% of the total. A few juniper and pinon grow in cracks along with cacti and bitterbrush. Another 40% of the area is taken up by a desert shrub zone which is a sand dune area resting on a slickrock base. Snake weed and cheat grass with considerable ephedra attest to heavy grazing. A single lithic scatter was recorded in this region. The juniper-pinon overstory spreads over the remaining 30% of the quarter section. This is in eroded canyon bottoms where there are some active seeps. Vegetation includes various grasses, bitterbrush and cliff rose. No sites were found in this area. (Corner marker found.) JUNIPER - PINON.



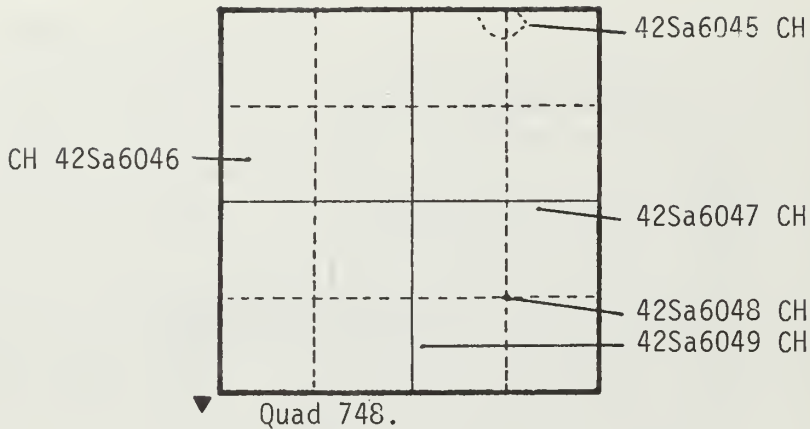
42 Sa 6053 Elev. 1487m (4880 ft.) The site measures 100 meters north-south and 140 meters east-west. It lies in aeolian soils with a 4° slope generally down to the north. Slickrock exposures are common in the site vicinity. The site has been damaged by erosion, by vandalism and by the construction of a road across the southern portion of the site. The area is characterized by a sparse scatter of juniper and pinon. The most common shrub forms are sage brush and ephedra while snake weed and cactus were also observed. A knife fragment as well as white chert primary and secondary flakes proved inadequate to the assignment of a cultural affiliation at the site.

Quad 697. (Sec. 21 SE 1/4, T27S, R23E) This quadrant is located on a broader part of the Pack Creek Valley than was Quad 43. About 40% of the unit is in the creek canyon while the balance is on the western slope. Some 65% of the area is covered with a good stand of juniper and pinon while 30% is given to brush-covered flats and slopes. The 5% balance is eroded wasteland. A single lithic scatter was recorded while an Elko Corner Notched point was an isolated find. (A stone cairn was located although the pipe and brass cap were missing. The position was confirmed by triangulation on topographic features.) JUNIPER - PINON.



42 Sa 6066 Elev. 1902m (6240 ft.) Located on a ridge overlooking Pack Creek, this chipping site measures 200 meters east-west and 75 meters north-south, and drops very slightly to the west. The residual soils are covered with a heavy stand of juniper and pinon while blue gramma grass was also noted. White chert primary and secondary flakes and knife fragments found were insufficient to permit cultural identification.

Quad 748. (Sec. 5 NE 1/4, T28S, R23E) The quadrant is characterized by a wide alluvial plain rimmed by slickrock exposures and a mesa which is formed by a fine-grained sandstone in combination with a conglomerate of waterworn cobbles and pebbles. This appears to be the source of chert found at all five sites recorded. Upon this base there are three major zones. Brush flats account for about 22% of the area. Brush combines with occasional juniper or pinon, cheat grass and crested wheat grass. Two sites were found in the area--Some 60% of the unit is covered by juniper and pinon growing on eroded talus and ridge slopes where the conglomerate forms the base. The understory involves small shrubs and some grass along with cacti and ephedra. Two sites were recorded. --- In the third area, accounting for the remaining 18% of the land, a mesa top was once covered with a dense juniper-pinon stand that has been chained. A single site was recorded in this element. (Marker not found. Area where it was expected much disturbed by roads, drill pads and a drainage system. Location established by triangulation on topographic features.) JUNIPER-PINON.



42 Sa 6045 Elev. 1731m (5680 ft.) A large lithic scatter and chipping area, 150 meters by 300 meters, has a general exposure due west and ground slope varies between 2 and 15°. Soils are both residual and alluvial in nature. A ridge dominates the northern perimeter of the site, while a sage brush flat and clearing occur on the eastern and central portions of the site. A dirt road cuts through the southern section of the site and two drill pads have been placed near its middle and south-east areas. Also, along the southern periphery are several arroyos. Erosion, over grazing, vandalism and construction have destroyed most of the site area. Stands of juniper and pinon trees along with sage flat formations grow within the site area. Also noted were rabbit brush, ephedra, cactus, thistle, snake weed and cheat grass. Artifacts which were observed were waste flakes and one worked flake. No cultural determination was possible.

42 Sa 6046 Elev. 1780m (5840 ft.) General exposure of the 30 by 50 meter site is to the northwest with a gradual ground slope of 4°. The lithic scatter is located on a small ridge with a knoll on the southern end of the site perimeter. Arroyos flank both the east and west sides of the site. The site is in poor condition because the residual soils have been eroded away. Juniper and pinon woodlands occur in the general site area along with sage brush, ephedra, yucca and curly grass undergrowth. The only artifacts observed were waste flakes, mainly of white chert. No cultural determination was possible.

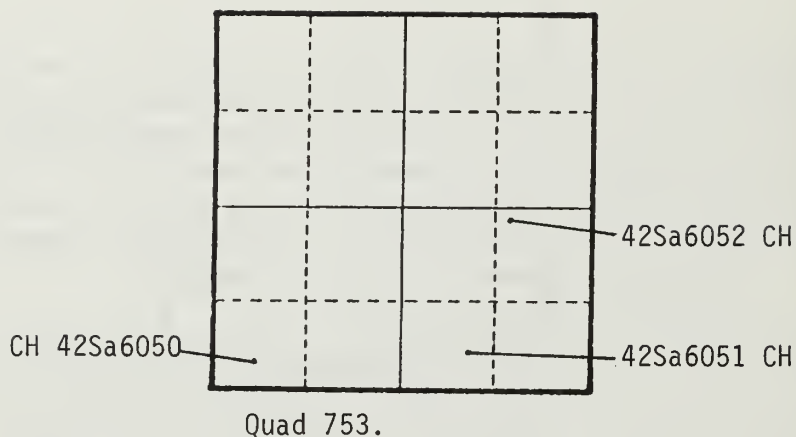
42 Sa 6047 Elev. 1780m (5840 ft.) The small chipping station-lithic scatter is 30 meters square and has the general exposure toward the east. The terrain in and near the site is nearly level with a ground slope of only 3°. The northeast perimeter of the site is flanked by arroyos while the northern area has a power line

42 Sa 6047 (Cont) crossing on a south-east-northwest axis. Due to erosion of the residual soils and construction of the power line, much of the site has been destroyed. Most of the vegetation of the area is shrubs and grasses, sage brush, cheat grass, curly grass and snake weed, with only a few isolated juniper trees. All artifacts observed were waste flakes of white chert. No cultural determination was possible.

42 Sa 6048 Elev. 1804m (5920 ft.) The small chipping station is only six meters square and is located on a ridge with an arroyo to the west. The general exposure of the site is to the northeast with only a gradual ground slope of 2° or less. Soils are residual in origin and natural erosion has disturbed the site only to a minor degree. Other than this impact, the site is in fair condition. The site lies in a juniper-pinon woodland with ephedra, small sage brush, snake weed, cheat grass, and crested wheat grass as undergrowth. No cultural determinations were possible because cultural debris was restricted to waste flakes.

42 Sa 6049 Elev. 1853m (6080 ft.) The site, a lithic scatter and probable chipping area, is 20 meters by 40 meters with a general southeast exposure. It lies on a ridge with an arroyo to the east. Soils are residual and chaining has deforested the entire area. Because of this, the site has been severely impacted and virtually destroyed. Juniper and pinon trees were once the overstory while sage brush, crested wheat grass, ephedra, snake weed and cactus now dominate. Site artifacts consist of waste flakes and two utilized flakes. No cultural determinations were possible.

Quad 753. (Sec. 3 SW 1/4, T28S, R22E) Wastelands account for 25% of the quadrant with 7% a slickrock area and 18% involving a cliff and canyon bottom area. This has a fair stream flow but erosion and floods would have eradicated any cultural evidence that may have existed. Groves of cottonwood, rabbit brush and some juniper-pinon stands attest to greater moisture as do tamarisk and willows. No sites found in the wastelands. The remaining 75% of the quarter section is desert shrub land with shallow soil covered with cheat grass, yucca, ephedra and a few stunted juniper. Three sites were found here. (Marker located.)
JUNIPER - PINON.



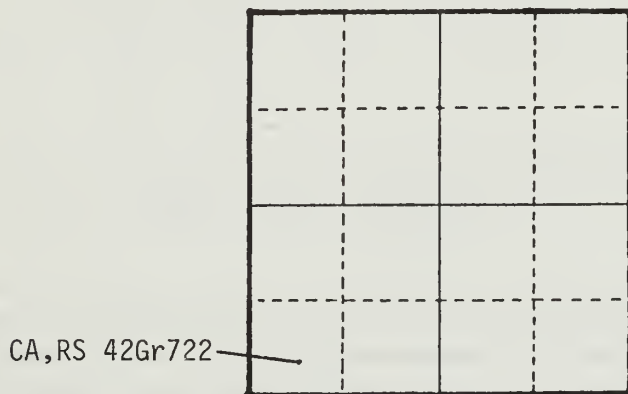
42 Sa 6050 Elev. 1622m (5320 ft.) The small lithic scatter, four meters north-south by six meters east-west faces south-east at 130° . Located in broken terrain, the site has a slope of 7° . A ridge lies directly west of the site area. The soil is residual, with evidence of erosion. Juniper-pinon make up the overstory with sage and snake weed below. Primary chert flakes were observed. The culture-period is indeterminate.

42 Sa 6051 Elev. 1585m (5200 ft.) The eight meter square chipping site faces east at 110° . Located in broken terrain on a slope of 5° , it is about 400 meters southeast of 42 Sa 6050. The residual soil exhibits some erosion. Juniper-pinon, sage, prickly pear, and snake weed make up the vegetative inventory. Core fragments and primary and secondary white chert flakes were noted. Cultural determination was not possible due to the lack of diagnostic material.

42 Sa 6052 Elev. 1573m (5160 ft.) Similar to sites 42 Sa 6050 and 6051, this small four by six meter lithic scatter sits on a slope of 4° . The site faces southeast at 120° , and a drainage runs to the northeast just on the north side of the site. Substantial erosion is evident and the site is in poor condition. Juniper-pinon, sage, ephedra, snake weed and cheat grass grow in the residual soil of the area. Primary chert flakes were observed, but the culture-period is indeterminate.

Quad 786 (Sec. 26 NE 1/4, T26S, R21E) The entire quadrant is typified by a high mesa top on which are found several large dune structures. Between these forms and in the deeper soils is a juniper-pinon/gambel oak zone. The forested region accounts for 73% of the quarter section

Quad 786. (Cont) while the remaining 27% is slickrock wasteland found in the northeastern area of the unit. A single site was recorded in the forested region. (Marker not found. Position established by triangulation on topographic features.) JUNIPER-PINON.

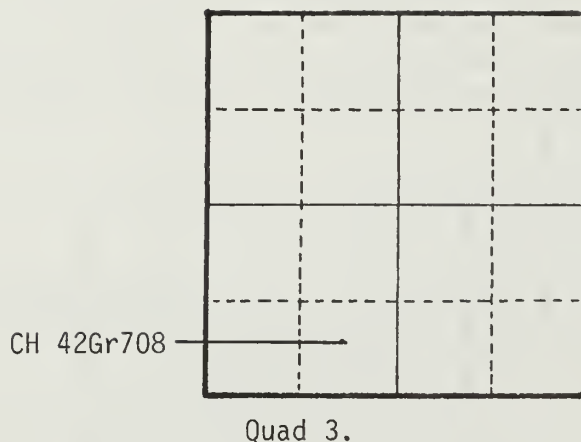


Quad 786.

42 Gr 722 Elev. 1460m (4790 ft.) Here a rockshelter cuts into a sandstone dome to attain measures of 5 meters wide, 10 meters high and 15 meters deep. The shelter faces due west with the ground in front sloping easily down at 2°. A few gray chert flakes were found below the shelter while inside it were found two cobble manos about half of a pecked slab metate. Such artifacts suggest fairly late use either by Southern Paiute or by Southern Ute.

THE DOLORES PLANNING UNIT

Quad 3. (Sec. 32SE 1/4, T19S, R26E) A relatively flat brushland area covers the entire quadrant. The soil is very sandy and cut by numerous small drainages running east and west. A small line of bluffs some 20 to 30 feet high run north and south along the western edge of the area. A small lithic scatter was recorded. (No corner marker was found. Difficulty in locating the section resulted from lack of map detail. Triangulation on topographic features used to establish position.) SAGE BRUSH.



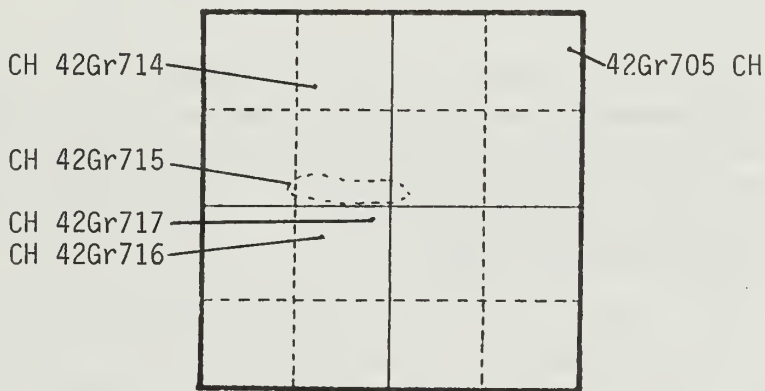
42 Gr 708 Elev. 1403m (4600 ft.) This small lithic scatter covers a 5 meter square located on a ridge above the Colorado River in a shrub land environment dominated by sage brush and snake weed. The site area slopes down to the SW at 3°. The lithics, composed of primary and secondary flakes, a core and a core shatter, fail to produce diagnostic data.

Quad 5. (Sec. 17NE 1/4, T21S, R26E) While a juniper-pinon stand covers about 2% of the unit in the northwest quarter, 98% of the land is covered with a brush flat that is cut by a shallow wash in the western portion. The quad is north of Picture Gallery Ranch and has been subject to moderate grazing. No sites were located. (Corner marker not found. Location established by triangulation on a fence line and on the Picture Gallery Ranch Buildings, all of which are plotted on the UGSG quadrangle.) GRASS.

Quad 12. Sec. 13 SE 1/4, T21S, R25E) A long, narrow mesa top accounting for 20% of the quadrant is covered with loose, shallow, sandy soils that reveal bedrock in places. A moderately dense juniper-pinon overstory is accompanied by bitterbrush, some grass and cacti. --- A juniper-pinon stand in the canyon bottom covers a mere 4% of the quarter section. Soils are deep but numerous gullies cut the area. Several grasses were noted along with scattered brush and some cacti. --- The remaining 76% of the quad proved to be wasteland composed largely of talus slopes and slickrock. Scattered juniper with some brush was found in cracks and some basins. A number of potential rock shelters were noted but none revealed human use. No sites were found in the quad. (Corner marker not found and position established by triangulation on topographical features.) BARREN WASTE.

Quad 105. (Sec. 8 SE 1/4, T22S, R26E) The quad is dominated by a mesa top and associated bottom land. A juniper-pinon forest covers 85% of the section and proved to be especially dense on the mesa top although it was heavy in the bottom land as well. Wasteland slopes between the mesa and the bottom land accounted for the remaining 15% of the area. No sites were recorded in the quad. (Marker not found and position fixed by triangulation on topographical features. Lack of map detail made quad location difficult.) JUNIPER - PINON.

Quad 163. (Sec. 25 SE 1/4, T22S, R24E) An estimated 55% of the quarter section was occupied by a slickrock mesa area largely covered by a juniper-pinon overstory accompanied by grasses and cacti. Two sites were recorded here. --- Another 20% of the area under study was taken up by the terrace levels and saddles which lie above the main canyon bottom. A moderately dense juniper-pinon stand covers this. Two sites located here. --- The remaining 25% of the quadrant was given over to canyon bottom and talus areas which were mostly eroded. Various woody shrubs, rabbit brush and cacti form the major vegetation. A single site, found adjacent to a large chert and quartzite source below the Morrison formation, was recorded. (Corner marker not found. A stone cairn without pipe or cap was at that apparent location and this appears to have been verified by triangulation on topographic features.) JUNIPER - PINON.



Quad 163.

42 Gr 705 (Elev. 1478m (4850 ft.)) This chipping site is contained within an 8 meter square. Situated in a canyon bottom with a 5° slope, the site is in a growth of saltbush and ephedra although an occasional juniper was also noted. Lithics were confined to white and gray chert primary and secondary flakes and cores which provided no information upon which to base a cultural identification.

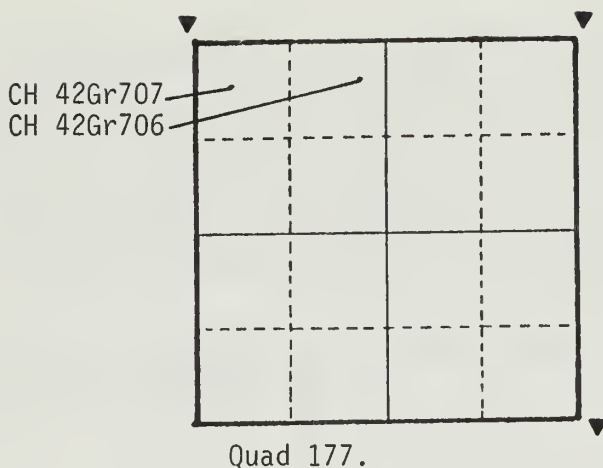
42 GR 714 Elev. 1463m (4800 ft.) Measuring 5 by 15 meters, the site rests on the residual soil of a bench where the slope drops to the SW at 6°--- a factor in the heavy erosion noted. The brushland system is dominated by sage brush, black brush, snake weed and curly grass while an occasional juniper or pinon is also to be seen. The primary flakes of chert, the scraper and the knife fragments were insufficient to determine a cultural affiliation.

42 GR 715 Elev. 1500m (4900 ft.) This is a site shaped in the form of a shallow crescent contained within an area 300 meters square although not occupying all of that area. Dominant brushland vegetation includes sage brush, black brush, snake weed, cheat grass, ephedra and prickly pear. The soil slopes down from the terrace in all directions at rates that range from 1° to 15° with a predictable amount of erosion. The heavy scatter of chert flakes provided no clue to a cultural association.

42 GR 716 Elev. 1530m (5020 ft.) A lithic scatter confined within a 5 meter square situated in the residual soil of a mesa top with a 4° slope down to the southwest. The brushland is dominated by black brush, ephedra and snake weed with scattered juniper present. Chert flakes and a knife fragment provide no clues as to cultural affiliation.

42 Gr 717 Elev. 1499m (4920 ft.) A lithic scatter covering an area 20 meters square, the site is situated in the residual soils of a mesa top with a 4° slope down to the southwest. Black brush, sage brush, ephedra, a few juniper, snake weed, and curly grass form the bulk of the plant community. Chert flakes provided no culturally diagnostic data.

Quad 177. (Sec. 5 NE 1/4, T23S, R25E) A dense juniper-pinon forest dominates 91% of the quadrant. The area is cut by a major wash and several minor tributaries all running roughly northwest to southeast. Brush flats account for the remaining 9% of the area. Two sites were recorded in the brushland in association with chert resources. (Three markers located.) DESERT SHRUB.



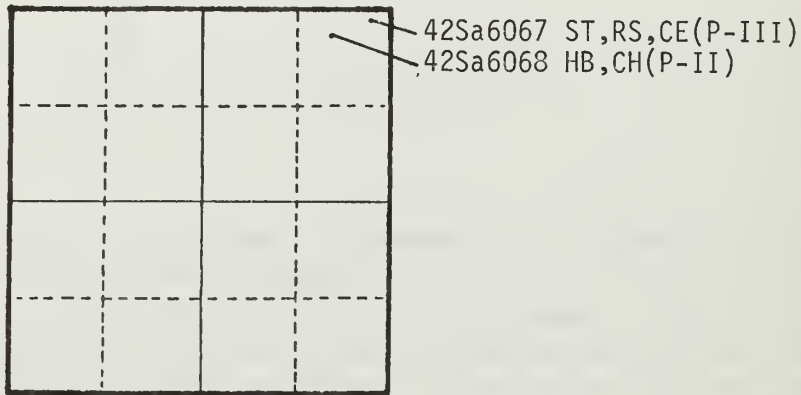
42 Gr 706 Elev. 1463m (4800 ft.) This small lithic site rests on broken ground with residual soil at the edge of a canyon bottom. Measuring 15 meters north-south by 8 meters east-west the site area slopes down at a rate of 5° to the SW. Brushland vegetation is dominated by saltbush, sage brush and rabbit brush. The site has been about half destroyed by erosion. Chert primary, secondary flakes and cores together with a biface fail to provide information needed to assign a cultural affiliation.

42 Gr 707 Elev. 1450m (4760 ft.) Located in a canyon bottom stand of juniper-pinon, the site area slopes down to the north at 5° and is heavily eroded. The woodland clearing is covered with saltbush and sage brush where the site measures 100 meters east-west and 50 meters north-south. The entire site has been subject to heavy erosion. Chert primary and secondary flakes, cores and a few blade forms were insufficient to provide a basis for fixing a cultural affiliation.

Quad 232. (Sec. 15 SE 1/4, T23S, R25E) The first zone here covers 18% of the quad and is classed as a wasteland of broken cliffs and talus slopes. Some juniper and pinon is to be seen as is a little grass and brush but all vegetation is very sparse. --- A mesa top with relatively flat topography of clay soil covers 82% of the unit. A stunted and sparse juniper-pinon overstory is accompanied by stunted sage, blackbrush and cacti. No sites were found in the quad. (Corner marker was located.)
DESERT SHRUB.

BEEF BASIN PLANNING UNIT

Quad 16. (Sec. 17 NW 1/4, T32S, R19E) The quadrant was dominated by rolling brushland covering 94% of the land. In the northeast corner of the unit a low ridge covered with juniper and pinon accounts for the balance of the area. The two sites recorded were found in the small forested area. These were both habitation sites composed of room blocks and granaries with associated sherd concentrations. (No marker located. Position established by triangulation on topographic features.) SAGE BRUSH.

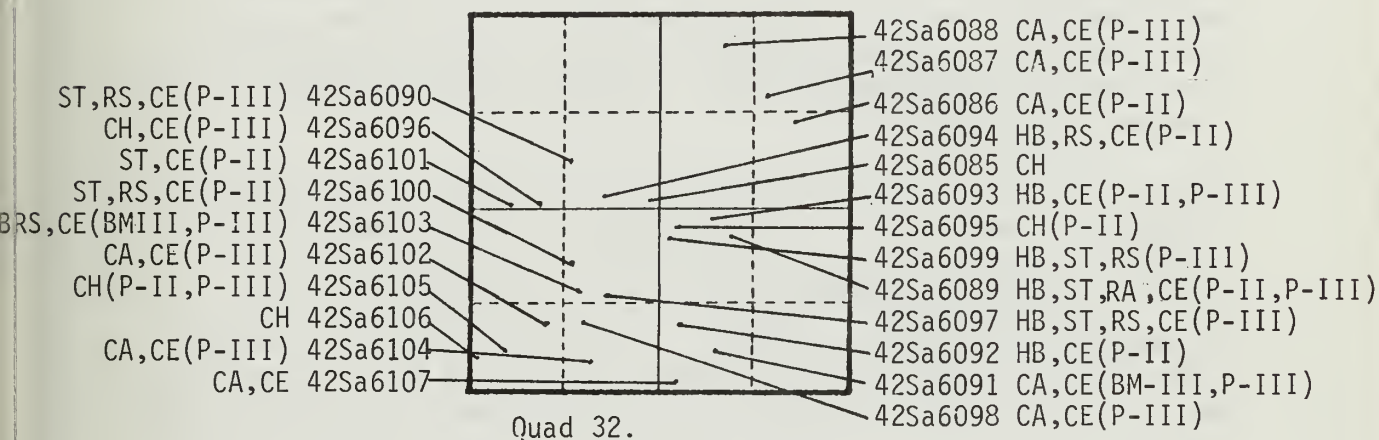


Quad 16.

42 Sa 6067 Elev. 2840m (6720 ft.) Measuring 30 meters north-south and 5 meters east-west, the site is located in a slickrock area where two forms of sandstone meet to form a ridge in which small rockshelters are formed. The area is within a juniper-pinon forest with a sage brush and saltbush understory. Included within the area are the remains of drylaid stone walls indicating the presence of at least 5 small granaries. In addition to flakes, cores, knives, and a mano, sherds on the site were tentatively identified as Mesa Verde B/W, Mancos B/W and Mesa Verde Corrugated---all of which suggest an early Pueblo III affiliation.

42 Sa 6068 Elev. 2024m (6640 ft.) This 10 x 10 meter site is situated on a small bench overlooking a sage brush flat. A slight erosion has moved the residual soil from the eastern edge of the site which slopes slightly down to the southwest. The site itself is in a good growth of juniper and pinon which is underlain by sage brush and wild grasses. A pit house is suggested by a depression. Secondary and tertiary flakes were noted while the provisional identification of sherds as Mancos B/W and white ware corrugated sherds suggests a Pueblo II period.

Quad 32. (Sec. 7 NE 1/4, T32S, R18E) Brushlands dominate the quad and account for 70% of the area. The ground is cut by gullies but the area supports a growth of small brush, rabbit brush, and cacti. A talus and sand dune area covered 20% of the land. The overstory included scattered but large juniper and pinon trees, some grass, ephedra, brush and cacti. A large number of sites, both habitation and camp, occurred in the zone. These tended to concentrate in the sandy areas. --- The cliff and mesa top region which embraced only 10% of the unit also contained a number of granaries and camp sites. Soils were shallow with sparse grass and a light juniper-pinon cover. (Marker not found. Position established by triangulation on topographic features.) GRASS



42 Sa 6085 Elev. 2025m (6640 ft.) Measuring only 15 by 20 meters, this lithic scatter is located on a bench covered with an eroded residual soil. Vegetation includes juniper and pinon with saltbush, snake weed and ephedra. Red and black chert detritus provided no basis for a cultural identification.

42 Sa 6086 Elev. 1865m (6120 ft.) This possible camp site is confined to a 25 meter square on the crest of a knoll with nearly level surface of residual soil which has been slightly eroded. Here the dominant vegetation is sage brush, saltbush and blue gramma grass. Lithics were confined to red, black, and gray chert tertiary flakes while a few sherds recovered include McElmo B/W (1075-1275), Mancos B/W (900-1150) and Mancos Gray (900-1000+) combine to suggest a 1050 date, something between middle and early Pueblo II.

42 Sa 6087 Elev. 1853m (6080 ft.) A possible camp site confined to a 5 meter square, the feature is located on the floor of Bull Valley where the residual soil has been heavily eroded despite the fact that the surface appears to be nearly level. Vegetation is confined to sage brush and cheat grass. Cultural material was limited to a small ceramic scatter which included corrugated and Mesa Verde B/W sherds which suggest a Pueblo III assignment.

42 Sa 6088 Elev. 1829m (6000 ft.) Measuring 30 meters north-south and 20 meters east-west, this site is located on a slope of residual soil above the floor of Bull Valley. The rather heavily eroded area is in a brushland zone with sage brush, saltbush, and cheat grass forming the dominant cover. The lithics were restricted to gray chert flakes, but the presence of Mesa Verde Corrugated sherds suggest this is a possible camp site with a Pueblo III association.

42 Sa 6089 Elev. 1865m (6120 ft.) This habitation site measures 50 meters north-south and 60 meters east-west and is located on a hill with a bench mark reading of 6355 (USGS-Needles 15') One structure measures 2 meters by 2.4 meters and is formed of masonry of unshaped sandstone. A second element measuring 1 by 1.5 meters is similarly constructed and lies some 50 meters NW of the first structure. A storage cist and an apparent fire basin found 10 meters west of the first structure are indicative of living activity as is yet another fire pit located 25 meters west of the cist. The residual soil is eroding, apparently at an increasing rate. Although a few juniper and pinon are present, the area is brush land with sage brush, snake weed and ephedra the most common plants. Lithics included chert flakes, a side notched point and an obsidian knife. Four manos were noted along with a fragment of a slab metate. Ceramics included corrugated and plain sherds as well as Mesa Verde B/W. A late Pueblo II - Pueblo III site is suggested.

42 Sa 6090 Elev. 1853m (6080 ft.) This possible camp site measures 5 meters square and involves a rock shelter which may have developed as a granary. The shelter had been vandalized and no fill was visible although the roof appears to be fire-blackened. The area is in a juniper-pinon forest. The residual soil near the shelter is heavily eroded. Secondary flakes of red and gray chert constitute the lithic inventory while sherds included Mesa Verde Corrugated which suggests a Pueblo III affiliation.

42 Sa 6091 Elev. 1878m (6160 ft.) The site measures 20 meters north-south by 30 meters east-west. The site area slopes down to the SE at 6° , and the residual soil of the area is heavily eroded. This possible camp site is in juniper-pinon woodland where the understory includes sage brush, ephedra, snake weed, wheat grass, thistle and a plant having holly-like leaves. The rockshelter portion of the site faces SE. Lithics included gray chert flakes and a fragmentary corner notched point. Ceramics include Piedra B/W and Mesa Verde B/W. This curious combination suggests both Basket Maker III and Pueblo III but the latter date would appear to be the most probable.

42 Sa 6092 Elev. 1867m (6125 ft.) This habitation site is contained within a 20 meter square. Located on a bench overlooking Bull Valley where, although a few juniper and pinon are present, the area is essentially brush land with sage, saltbush, black brush, yucca, cheat grass and crested wheat grass the dominant plant forms. A very slight slope of the residual soil is down to the west. The focus of the site is a structure of coarse unmodified sandstone, circular in outline, the diameter of the feature varies from 2.4 to 2.6 meters. Lithics were confined to gray and red chert flakes while corrugated sherds with Mancos B/W and other Mesa Verde white ware indicate a late Pueblo II site.

42 Sa 6093 Elev. 1868m (6130 ft.) This structural site is located on a ridge overlooking flats in Bull Valley to the east and to the north. The residual soil slopes down to the NE at about 3° . Although an occasional juniper or pinon is to be seen, this is essentially brushland with the dominant vegetation being sage brush, black brush, yucca and cheat grass. The site area measures 30 meters east-west and 20 meters north-south. A two room unit made of large blocks of unmodified sandstone form an "L" shaped feature at the northwest corner of the site. Some of the walls rest directly on bedrock. Overall, the structure measures 7 by 9 meters. A substantial lithic and ceramic scatter was found north of the structure. Flakes of red and gray chert as well as of quartzite formed the total lithic material while sherds included Mesa Verde B/W, Mesa Verde Corr. Mc Elmo B/W, Mancos B/W, and Piedra B/W. In spite of the single sherd of each of the two latter forms, it seems most likely that the site marks a fairly early Pueblo III habitation.

42 Sa 6094 Elev. 1865m (6120 ft.) This rockshelter has an area 5 meters square and faces north. An apparent wall has existed near its mouth and a fire pit was also noted. There has been considerable roof fall in the shelter while the slope below is eroded to reveal some charcoal along with lithic and ceramic materials. Essentially brushland, the site area is dominated by sage brush, a bush with pointed, holly-like leaves and crested wheat grass. Lithics were confined to pink chert flakes while the only ceramics collected included a Mancos Gray sherd and an unidentified white ware which, at most, suggests Pueblo II.

42 Sa 6095 Elev. 1878 m (6160 ft.) The site was found on a level part of the second terrace overlooking Bull Valley. The residual soil is eroded showing the sandy material to be quite shallow. An occasional juniper or pinon was noted in the brushland that was dominated by sage brush, snake weed, curly grass and yucca. A small sherd, either Mancos or McElmo, suggest early Pueblo II. No additional diagnostic assistance was found in a scraper and three knife fragments or flakes of gray chert.

42 Sa 6096 Elev. 1871m (6140 ft.) This lithic scatter measures 75 meters east-west and 20 meters north-south. Located on a terrace overlooking Bull Valley, the residual soil is badly eroded but contained many deer tracks. Although there are some juniper and pinon, the area is dominated by sage brush, yucca and snake weed. Lithic materials included primary flakes of chert, two corner notched points and a knife fragment. Ceramics were confined to two very small white ware sherds. One of these appears to be McElmo, suggesting, though most tenuously, Pueblo III.

42 Sa 6097 Elev. 1875m (6150 ft.) Located in brushland just above a cliff, this storage site measures 10 by 45 meters along the base of yet another ledge. Sage brush, black brush and some snake weed dominate although there are scattered juniper and pinon. The site contains six granaries and two probable granaries. The structures have been numbered from north to south along the narrow ledge on which they are situated. Structure #1 has coarse, drylaid masonry across the mouth of a cave which is 2 meters wide and 1 meter deep. Structure #2 involves drylaid masonry also of unmodified sandstone placed in front of an overhang 2.6 meters wide and 1 meter deep. Structure #3 involves two courses of masonry in front of a shelter 7.5 meters wide and 2 meters deep. The shelter seems to have about 4 cm of fill. Structure #4 has

42 Sa 6097 (Cont) 3 courses of drylaid masonry at the mouth of a shelter 2.7 meters wide and 1.4 meters deep with fill also appearing to be some 4 cm deep. Structure #5 is a cave in which the wall at the mouth has been nearly destroyed by roof fall. Some 2 meters inside the cave is the remains of another wall laid with mortar which is three courses high. This wall is about 1.5 meters wide and the cave extends another 3 meters behind the wall. Overall, the cave measures 2 meters wide and 5 meters deep with about 6 cm of sand fill. Structure #6 has been badly eroded although it appears clear enough that it was also fronted with a masonry wall drylaid of unshaped sandstone. The wall still covers 2 meters of an opening 6 meters wide. The shelter is 1.6 meters deep. Two McElmo B/W sherds suggest a Pueblo III affiliation.

42 Sa 6098 Elev. 1871m (6140 ft.) A possible camp site contained within an area only 2 meters square on the slope of a sandy dune-like area. The area is dominated by sage brush, black brush, and snake weed with an occasional juniper or pinon. This badly eroded site produced only Mesa Verde Corrugated sherds. These suggest Pueblo III.

42 Sa 6099 Elev. 1871m (6140 ft.) This combination habitation and storage site occupies a site area measuring 25 meters east-west and 10 meters north-south on a ledge generally facing SE with a slope in sandy residual soil dropping away from the site at about 3°. Sage brush, black brush, ephedra and snake weed are dominant though some juniper and pinon can be seen. Erosion has nearly destroyed the granary and has eaten into the fill of the room block. Principle features of the site include two granaries, a single room habitation block, and an ash lens. The habitation room was 3 meters square and formed of unshaped sandstone blocks. Erosion has partially destroyed the west and south walls. Granary #1 was found 5 meters E of the room. Only about one half of the original length of the wall remains. The wall is made of unmodified sandstone blocks and, at one point, is still 3 courses high. Granary #2 is a small feature with a wall made of shaped sandstone about 3 courses high. It is situated some 20 meters East of Granary #1. The shelter it encloses is 1.2 meters deep. Originally, the wall would appear to have been 1 meter high and 1 meter wide. The fire basin is 7 meters SE of the habitation room. Here, erosion has been so great that the dimensions of the basin is almost impossible to assess. A small cobble mano was found on the surface near the fire basin. Sherds identified as Mesa Verde B/W and McElmos B/W argue a Pueblo III occupation here.

42 Sa 6100 Elev. 1879m (6165 ft.) Located near a cliff edge, the site area measures 5 meters east-west and 15 meters north-south with a slope down to the north of as much as 6°. Black brush, sage brush, and snake weed are the dominant plants. The features here are a pair of granaries created by enclosing natural depressions in the sandstone about midway up a cliff face. Erosion has caused some damage to structure #2. Structure #1, is formed of mortar laid shaped sandstone. The walls have been chinked and the door capped with a cedar post lintel. The wall is 2.4 meters wide and 1.6 meters high and covers a depression some 1.7 meters deep. Structure #2 has been nearly destroyed. Only 50 cm of the wall remains although it covered 1.8 meter depression. Nearly all fill is gone. Two Cortez B/W sherds and 1 Chapin gray would place the occupation of the site, if they are significant, at about 900 A. D.

42 Sa 6101 Elev. 1877 m (6160 ft.) The site area is 10 meters square and slopes down to the east at 3°. The loose, sandy soil of the bench has suffered very little erosion. Black brush, yucca and various grasses are dominant, the scattered juniper and pinon occur. An apparent habitation room made of walls of unmodified sandstone measures 3 x 2.5 meters. Chert flakes provided no diagnostic aid while a Chapin/Gray sherd, a Mancos B/W sherd and an unidentified corrugated sherd suggest a date not much later than 900 A. D.

42 Sa 6102 Elev. 1920m (6300 ft.) This lithic/ceramic scatter covers a 3 meter square on a sandy bench facing north. The predominant cultural debris consists of flakes of chert--both secondary and tertiary. Also noted was a Chapin Gray sherd and a Chapin B/G in combination with 4 Mesa Verde B/W sherds and an unidentified corrugated sherd. At a site which, at best, was apparently a temporary camp site, the Chapin sherds perhaps should be ignored since it is unlikely this may properly be considered a multicomponent site, and a Pueblo III affiliation should be suggested.

42 Sa 6103 Elev. 1914m (6280 ft.) This habitation site lies within a 20 meter square on a bench overlooking Bull Valley. The slope is down to the east by as much as 4° --a fact which accounts for the substantial erosion observed. The environment is again brushland dominated by black brush, ephedra, snake weed and various wheat-like grasses. Some scattered juniper and pinon do occur. The two small rock shelters are located in a small cliff face. Erosion has

42 Sa 6103 (Cont) removed any fill that may have existed. The free-standing structure lies 15 meters S of the shelters. Nearly circular, it measures 3.7 meters north-south by 4.2 meters east-west. At one point the remaining wall shows six courses of shaped sandstone. The interior fill appears to contain a considerable amount of charcoal. Sherds observed included a Chapin Gray, a Chapin B/W and four Mesa Verde B/W. Although this may be both a Basketmaker and a Pueblo III site, the latter designation would appear to be the most appropriate.

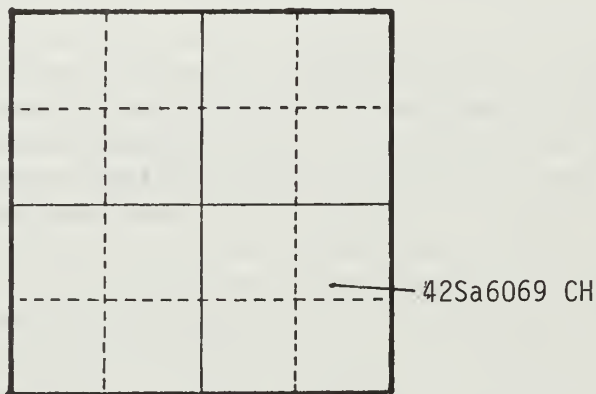
42 Sa 6104 Elev. 1917m (6290 ft.) This lithic/ceramic scatter lies within a 10 meter square on a terrace hard against the base of a cliff. This site faces east looking into Bull Valley. The shallow, sandy clay soil has been substantially eroded. Gray chert secondary flakes account for all of the lithics while sherds include corrugated forms and Mesa Verde B/W. Although sherds were not collected and brought to the laboratory for examination, it is reasonable to assign a Pueblo III status to the site.

42 Sa 6105 Elev. 1923m (6310 ft.) This small lithic scatter is contained within a 10 meter square. It is located on a mesa top where the residual soil slopes down to the SW at 3°. Erosion has been substantial. Brushland vegetation is dominated by sage brush, black brush, bitter brush, ephedra and snake weed. A few quartzite flakes combined with gray chert secondary flakes fail to provide any clue to the cultural affiliation.

42 Sa 6106 Elev. 1923m (6310 ft.) A lithic scatter of red and gray chert secondary flakes, the site measures 15 by 25 meters in badly eroded sand on a mesa top. The site area slopes down to the south at about 3°. Black brush and snake weed are the dominant plant materials. The lack of diagnostic material prevents cultural assignment at the site.

42 Sa 6107 Elev. 1911m (6270 ft.) A small lithic/ceramic scatter measuring 3 meters north-south and 7 meters east-west, this site is in loose, sandy soil at the base of a cliff. The site faces south with a slope of some 3°. The result of the slope has been considerable erosion. Sage brush, black brush, cacti, and snake weed dominate the area though a few juniper and pinon are also present. Secondary chert flakes and a point fragment complete the lithic inventory while a number of unidentified corrugated sherds were noted. The site may thus be considered to have been used in Pueblo II or Pueblo III times--- but it is certainly later than 900 A.D.

Quad 59. (Sec. 6 NW 1/4, T32S, R19E) This unit is dominated by a wash that is 80 feet deep in most places. This runs roughly north to south through the area and creates a wasteland accounting for 70% of the area. The remainder of the quad is covered with a thin stand of juniper in which a lithic site and an isolated Elko Eared point were found. (Stone marker without cap or pipe was found. Triangulation on topographical features established it as the corner marker.)
 JUNIPER - PINON.

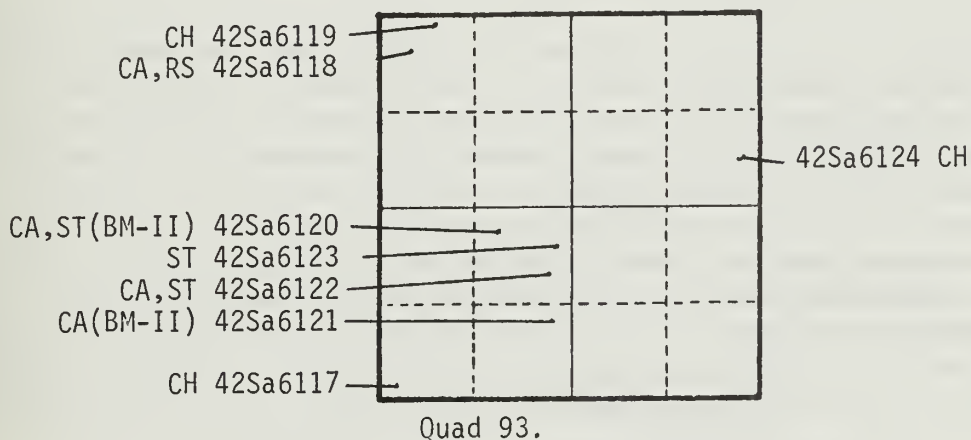


Quad 59.

42 Sa 6069 (Elev. 1901m (6240 ft.)) This chipping site is located on a river terrace located above a tributary to Butler Wash. Heavy erosion of the aeolian soil has nearly destroyed the site which is in an open juniper-pinon stand which includes service berry and ephedra. Cultural material included primary, secondary, tertiary flakes, a core fragment and some blade forms. Nothing found proved sufficient for cultural identification, despite the substantial size of the scatter which measured 75 meters east-west and 100 meters north-south.

Quad 93. (Sec. 9 SW 1/4, T33S, R16E) A comparatively level region of juniper-pinon growth extends over an estimated 42% of the unit. Soils are shallow but an understory of black brush, ephedra, cacti, and a few grasses persist. Five camp and storage sites were found close to the arroyos and rock outcrops in this region. --- A slickrock and table rock zone accounting for 32% of the area is essentially brushland although juniper and pinon join black brush and cacti. The area is heavily eroded and produced one site. --- The cliff and talus slope wastelands amounting to 14% of the total land produced no sites. Small niches produced juniper, pinon, bitterbrush, and other plants. --- Also in the wasteland category was the remaining 12% of the land given to canyon and wash bottoms.

Quad 93. (Cont.) While two sites were recorded along the edge of washes, erosion continues to remove soil rapidly. Some juniper and pinon grow here along with snake weed and curly grass, brush, cacti, and yucca. Numerous game trails noted as well as doves and chukar. Marker not found. VABM 6172 was found nearby and position fixed by following compass bearing to corner.) DESERT SHRUB.



42 Sa 6117 Elev. 1706m (5600 ft.) This lithic scatter measures 50 by 70 meters and is located on aeolian soil on a terrace. Erosion appears to be caused by both wind and water in this case. The ground slopes slightly down to the south. Cultural debris was limited to primary and secondary flakes of red and gray chert. Cultural identification was, thus, impossible.

42 Sa 6118 Elev. 1698m (5570 ft.) The site includes a rockshelter with an associated lithic scatter, all located at the bottom of a canyon within an area measuring 10 meters east-west and 8 meters north-south. The brushland system is dominated by blackbrush, holly, yucca, and curly grass. On its northern side, the site surface is rocky talus material but along the southern edge it is fine sand. A slope of only 2° falls easily to the south. The cultural material was restricted to a heavy scatter of red, purple, and gray chert flakes. No cultural affiliation can be suggested.

42 Sa 6119 Elev. 1698m (5570 ft.) Located in canyon bottom alluvial soil with a southernly slope of 4° , this site measures 20 meters north-south and 25 meters east-west. In such conditions, it is predictable that erosion would cause some secondary depositions at the site. Dominant plants included black brush, ephedra, and snake weed with an occasional juniper or pinon. The heavy concentration of purple chert secondary and tertiary flakes suggested a kill and/or butchering site to survey crew members, but the material shed no light on cultural affiliation.

42 Sa 6120 Elev. 1731m (5680 ft.) Measuring 40 meters north-south by 30 meters east-west, the site rests on a loose, aeolian dune complex with a general slope down to the SE at 4° . Although a number of large juniper and pinon trees are on the actual site, the area is dominated by black brush, ephedra, cacti, and various grasses. The central feature of this chipping and camp site is a cist or fire box measuring 45 cm square and made of shaped, rectangular sandstone slabs. Some disturbance of the feature has been caused both by erosion and root growth. No ash or soil discoloration was observed. There were, in addition, a number of large gray chert primary flakes. No diagnostics were available to aid in fixing a cultural identification.

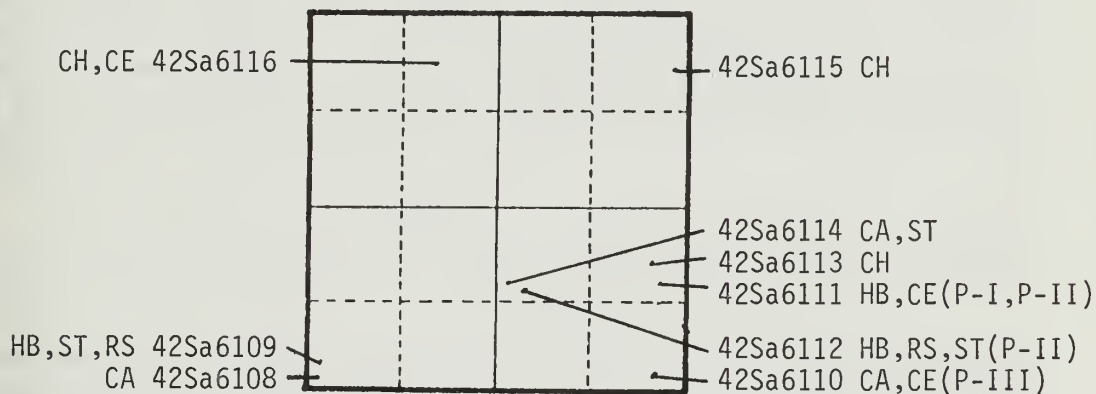
42 Sa 6121 Elev. 1719m (5640 ft.) This camp site is 5 meters square in a highly eroded dune complex. The slope is down to the SE at nearly 5° --a factor in causing severe erosion in the soft sand. A few large juniper and pinon were noted but the brushland domination of black brush and some grass continues. The central feature of the site is a sandstone, slab-lined basin showing a considerable amount of charcoal. The basis is 50 cm square. West of the basin or fire pit, were a number of chert flakes and a knife fragment, but the lack of diagnostics prevents a cultural assignment.

42 Sa 6122 Elev. 1719m (5640 ft.) This isolated fire pit was found in canyon bottom alluvial soils. Brushland domination of black brush is continued even here where the slope is down to the SE at 5° . The only evidence of man's activity here was the fire pit itself, made of sandstone blocks, and associated ash discoloration.

42 Sa 6123 Elev. 1728m (5670 ft.) An isolated storage cist was located on a bench above the floor of a large canyon. The aeolian soil is subject to some erosion on ground that slopes at a 5° rate to the south. Brushland domination continues although a few large juniper and pinon trees were close to the site. The feature is 50 cm square and formed with shaped rectangular sandstone slabs. No other cultural material was found in association.

42 Sa 6124 Elev. 1731m (5680 ft.) Located on a bench covered with alluvial soil, this lithic scatter measures 15 meters north-south and 20 meters east-west. A 4° slope drops to the southeast and the area has been severely eroded. Dominant plants include sage brush, black brush, ephedra, rabbit brush, curly grass, and snake weed. Cultural material was restricted to brown chert primary flakes and it was thus impossible to make a cultural assignment.

Quad 102. (Sec. 16 SE 1/4, T33S, R16E) The 15% of the land given to juniper, pinon, and sage produced a single site. The shallow soils also support some brush, cactus, and grass. --- The 18% of the unit involving juniper-pinon covered terraces formed by the erosion of various rock layers yielded six sites. Many deer trails in this zone are evidence of the value of the brush in the area. --- A slickrock mesa covering 45% of the quadrant dominated its center and produced a single site. Pockets of soil had heavy floral cover because of water concentration but erosion has removed much of the soil. --- The remaining 22% of the area was wasteland formed by cliffs, steep talus and canyon bottoms. A single site occurred here but there is little soil remaining after erosion. Sparse brush, juniper and pinon are characteristic. (Marker not found and position established by triangulation on topographic features.)
DESERT SHRUB.



Quad 102.

42 Sa 6108 Elev. 1743m (5720 ft.) A possible camp site measuring 20 by 25 meters and sloping down to the north. With a slope of 5° the site has predictably been subject to heavy erosion. The presence of 3 manos argues this was a camp site. It lies in a sand-dune, slickrock area with traditional brushland cover of black brush, yucca, curly grass and an occasional juniper. One of the manos is of an oval type while the other two are what is often termed the one handed form, being rectangular with rounded corners. Chert and quartzite flakes complete the inventory of cultural material and no cultural determination can be made.

42 Sa 6109 Elev. 1744m (5725 ft.) A small rock shelter in slickrock that has been developed into a granary. The shelter is 1.2 meters wide and 1.4 meters deep. The roughly shaped, drylaid masonry that partially closes the opening---about one third of the lower portion of the wall remains. The area is brushland dominated by black brush. A few flakes failed to provide the evidence needed to make a cultural assignment.

42 Sa 6110 Elev. 1755m (5760 ft.) This possible camp left a small cultural scatter no more than 1 meter square. The area slopes down to the SW at 5° and there is thus considerable erosion. The location is in an area dominated by black brush and sage brush on aeolian soil. The actual site is on a sand dune in the bottom of a canyon. Sherds observed in the field but not collected are said to have been Mesa Verde B/W. If this is accurate, the site can be regarded as having a Pueblo III affiliation.

42 Sa 6111 Elev. 1743m (5720 ft.) This habitation site contained within a 20 meter square sits on a small mound in an area dominated by black brush, ephedra, snake weed and curly grass. The general slope of the surrounding ground is to the south at about 5°. The surface evidence of perhaps two rooms is sitting on a slight mounded area. The structure is defined with about 2 courses of visible stone--all of which were at least roughly shaped. A small area NE of the structure displays considerable charcoal discoloration. Nearly all of the cultural debris observed came from this same area. Lithics were confined to a good sized quantity of chert flakes. Ceramic samples produced two Mancos B/W sherds and 1 Piedra B/W. This very small combination argues either for the assignment of late Pueblo I or early Pueblo II.

42 Sa 6112 Elev. 1743m (5720 ft.) Fitting within the boundaries of a 10 meter square, the site is on the loose sand of a residual soil which slopes down to the SW at about 3° resulting in some erosion in the site area. Although the tree count seems to increase over what was seen at earlier sites, the area is still brushland dominated by bitter brush and mountain holly. Structure #1 abuts a ledge and measures 4 by 3.5 meters. More or less attached to this were two apparent granaries. All were formed of sandstone walls, most of the stone being shaped into blocks. Structure #2 is marked by a single course of sandstone blocks and measures 3 by 2 meters. It lies about 10 meters south of Structure #1. About 5 meters W of Structure #1 is a small rockshelter measuring 2 meters in width and 1.5 meters deep. It is estimated to be 1.7 meters high. The shelter exhibits areas of intensive fire blackening. In addition to flakes, 2 Mancos B/W sherds and an unidentified corrugated sherd argue for a Pueblo II affiliation.

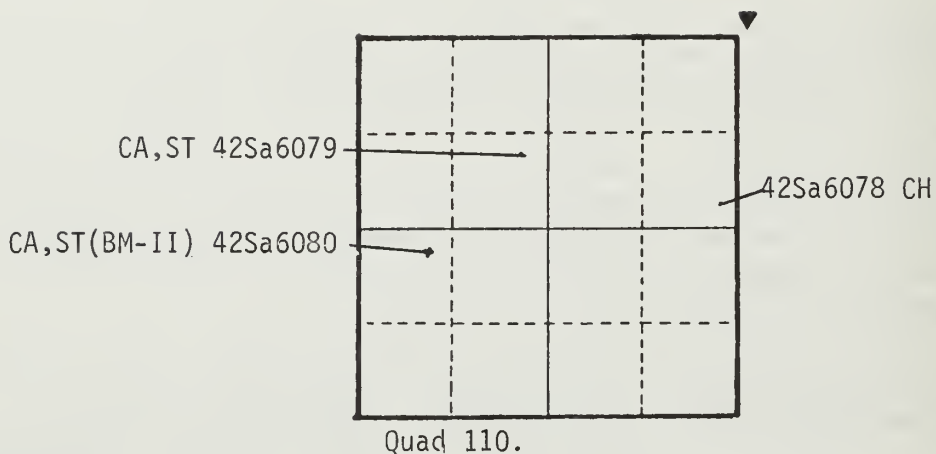
42 Sa 6113 Elev. 1749m (5740 ft.) A lithic scatter resting on a bench and facing nearly south with a slope down in that direction of 6°---a gradient which has fostered substantial erosion. The brushland environment is dominated by black brush, mountain holly, ephedra, and grass. Lithics took the form of primary and secondary flakes of a brownish gray chert, with 3 points and a scraper recovered. A possible Pueblo II affiliation was suggested by the field crew on the basis of a subjective view that this site is associated with sites 42 Sa 6111 and 42 Sa 6112.

42 Sa 6114 Elev. 1737m (5700 ft.) The evidence of this campsite is contained within a 1 meter square. Basically, it is a small, slab-lined fire pit located near the base of the ledge. Some charcoal is still visible. A few flakes and an absence of ceramics make it impossible to suggest a cultural affiliation for the site.

42 Sa 6115 Elev. 1694m (5560 ft.) This lithic scatter, measuring 10 meters square, is situated on a bench on residual soil with a slope down to the N at 3°. Snake weed, ephedra, and prickly pear are dominant. The soil, no more than 8 cm resting on bedrock is eroding substantially. The cultural debris of the site was limited to a heavy concentration of chert primary and secondary flakes. Without additional diagnostic material, no cultural assignment can be made.

42 Sa 6116 Elev. 1694m (5560 ft.) Another lithic scatter, this is a light one measuring 8 by 10 meters, also rests on a bench with a surface of residual soil. The ground slopes down to the N at 4° and erosion has virtually destroyed the site. Scrub oak joins the brushland list of plants here as does squaw berry. Others include mountain holly, yucca and snake weed. An occasional juniper or pinon is also seen. Chert flakes and a knife fragment are joined by a single, unidentified sherd which can only place this in the very general Anasazi period.

Quad 110. (Sec. 4, NE 1/4, T34S, R17E) The unit is located on a small mesa-like area situated between two canyons into which some of the unit falls. About 72% of the quadrant is the mesa area covered with a dense juniper-pinon forest. The cliffs and talus slopes create a wasteland accounting for 28% of the tract. (Marker located.) BARREN WASTE.



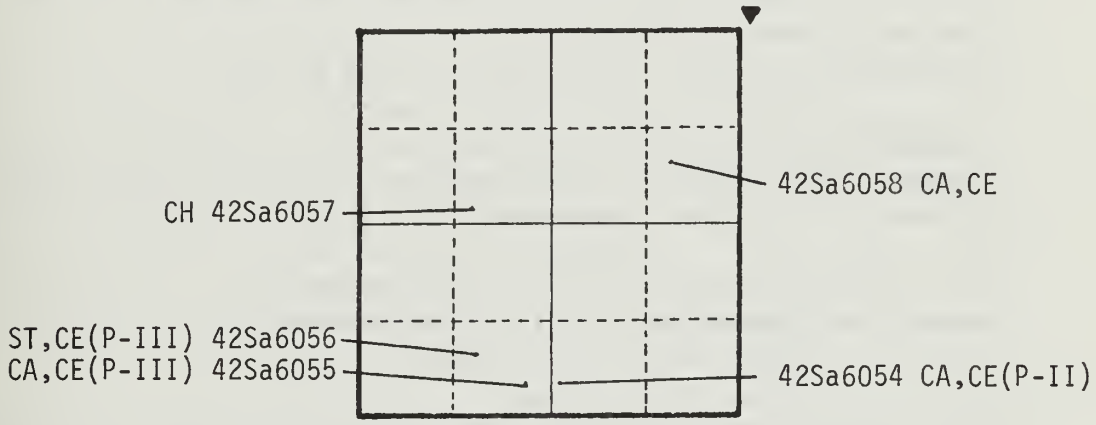
42 Sa 6078 (Elev. 2073m (6800 ft.) A small lithic scatter measuring 20 meters square, the site is located on the edge of a mesa top overlooking the head of Young Canyon. Although there is limited evidence of erosion in the sandy residual soil, the site is in good condition. The site area is in juniper-pinon forest land although a part of the area has been chained. The understory is composed of sage brush and saltbush. Cultural material was limited to secondary flakes and blade forms of chert and thus a cultural determination proved impossible.

42 Sa 6079 Elev. 2100m (6890 ft.) The site centers on a small, undisturbed, slab-lined fire pit with evidence of charcoal covering an area 6 meters square. The residual soil of the vicinity is nearly level while juniper and pinon dominate an understory of sage brush and saltbush. The absence of cultural debris precluded the assignment of a cultural-temporal position.

42 Sa 6080 Elev. 2973m (6800 ft.) This limited habitation site measures 9 meters north-south and 7 meters east-west. The focus of the site is a fire pit and an associated slab-lined cist, neither of which have been disturbed. The site is located in a small clearing in a juniper-pinon forest at a point just above the edge of an unnamed canyon. In addition to the understory of sage brush and saltbush, Oregon grape was also noted here. Although a projectile point was found among the secondary flakes, no cultural assignments could be made.

Quad 249. (Sec. 25 SE 1/4, T32S, R19E) A large mesa running roughly east and west dominates the quad. The juniper-pinon cover which amounts to 70% of the quarter section is found both on the mesa top and in some stands around its base. A small area of desert shrub accounts for only 2% of the land and the balance is a wasteland of cliffs and talus slopes. No sites were recorded. (Marker was found.) JUNIPER-PINON.

Quad 365. (Sec. 9 NE 1/4, T33S, R17E) The quadrant is characterized by a series of benches that form a semicircle around the head of a canyon. Juniper and pinon dominate these areas to cover 80% of the unit while wastelands in the form of talus slopes between the benches account for the balance. Three lithic sites, a sherd concentration, and a burn area outlined in stone were recorded. (A marker was located.) JUNIPER-PINON.



Quad 365.

42 Sa 6054 Elev. 1987m (6520 ft.) This site appears to have been a camp. It faces northeast at 50° and covers a ten meter by five meter area. West of the site is a gully which is eroding. The overstory is juniper-pinon while sage brush, ephedra and gramma grass comprise the understory. There appears to be a fire pit of which little remains. Mancos Corrugated and Mesa Verde white ware identifies the site as probably Pueblo II. Lithic artifacts include a knife, various primary and secondary flakes, and core shatter.

42 Sa 6055 Elev. 1996m (6550 ft.) This is a sizeable ceramic-lithic scatter although no structures were identified. The site faces east at 100° and sits on a bench-basin slope along a small eroding gully. Cliffs flank the west side. Main vegetation is juniper-pinon and sage brush. Lithics were not collected, but they include primary and secondary flakes and a metate. Potential building stone was abundant and perhaps was used even though no

42 Sa 6055 (Cont) standing or identifiable structures were found. Ceramics, lithics and usable building stone suggest, however, that structures have existed. Ceramics include corrugated wares, an Abajo rim, Mesa Verde white ware, and one possible Cortez B/W. Ceramics would place the site in late Pueblo II or early Pueblo III.

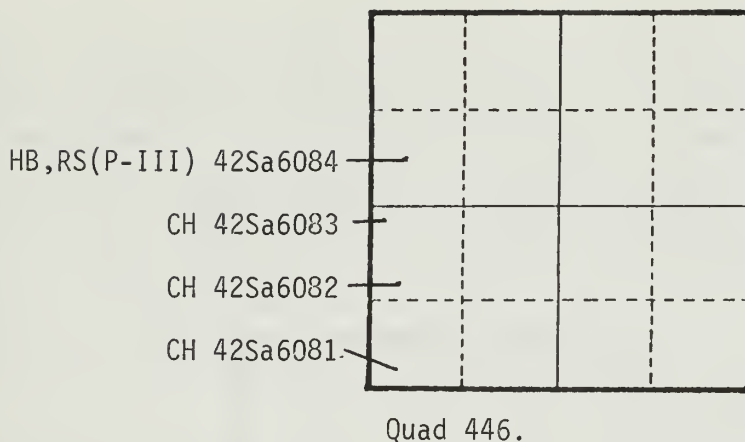
42 Sa 6056 (Elev. 1999m (6560 ft.)) This is a small granary with a few broad shaped building blocks remaining. If it existed, the mortar has "melted" away. The site faces north at 20° and a cliff rises immediately to the west. Main vegetation is juniper-pinon while snake weed and prickly pear provide the understory. The interior was empty except for one gray chert flake and two sherds of Mesa Verde corrugated. Site is probably Pueblo III habitation and may be associated with 42 Sa 6055.

42 Sa 6057 Elev. 1950m (6400 ft.) This small chipping site faces east at 100°. Sitting on a bench terrace, the site also is undergoing slope erosion. Main vegetation is juniper-pinon, snake weed, and prickly pear. Various chert flakes were closely spaced and lightly distributed in the five by five meter area. Lithics observed were mostly secondary and tertiary flakes with one gray chert knife tip. Culture-period could not be assigned.

42 Sa 6058 Elev. 1950m (6400 ft.) The site consists of a burned area with a heavy concentration of fire shattered rock which has nearly disintegrated. The site faces southwest at 205° and lies on residual soil. Water is 0.8 km to the north. Juniper-pinon comprise the overstory while sage brush and blue gramma grass are the understory. One white ware sherd was observed in the burned area, but no culture-period could be assigned.

Quad 446. (Sec. 18 SW 1/4, T33S, R18E) The quarter section is dominated by a deep canyon tributary of Fable Valley, that runs north and south through the unit. About 60% of the area is covered with juniper and pinon. This forest extends over a series of benches that comprise some 30% of the quad. The four sites recorded were all found on a bench on the west side of the canyon. Three were lithic scatters and the fourth was an apparent Pueblo III habitation. (A quarter section marker was found in the adjacent section and position was established by a compass march from that point.)

JUNIPER - PINON.



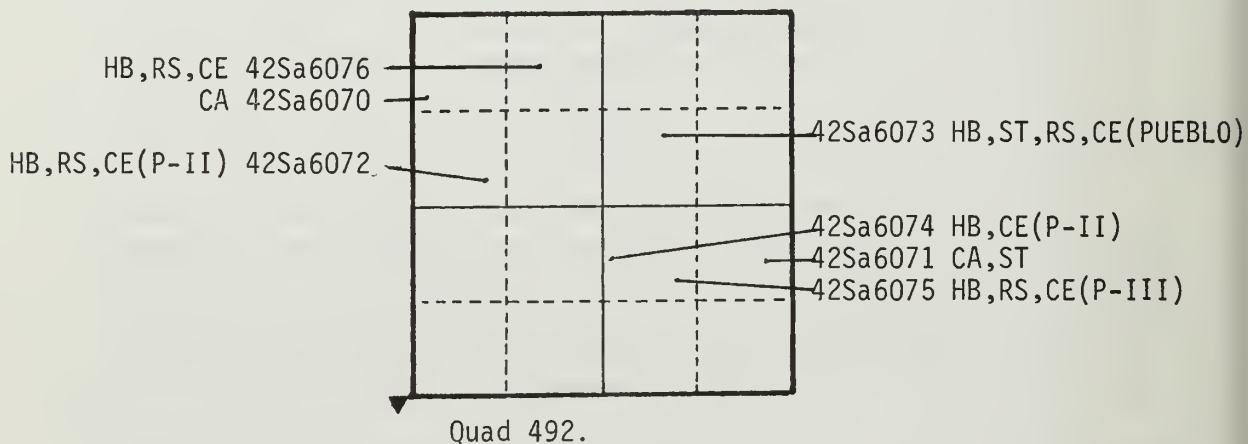
42 Sa 6081 Elev. 2194m (7200 ft.) A small lithic scatter contained within a 9 meter square, the site faces west with a slope of no more than 1° . The residual soil has been eroded slightly while the main vegetation is juniper-pinon over sage brush and saltbush. Lithic materials included primary and secondary flakes, blades, bifaces and core shatters. None of this contributed to a cultural identification.

42 Sa 6082 Elev. 2145m (7040 ft.) Measuring 15 meters east-west and 5 meters north-south, this lithic scatter is situated in a clearing in a juniper-pinon forest on an almost level area of residual soil. Flat brush, scrub oak and cactus constituted the understory. Although a projectile point was included with secondary flakes and blade forms, it has not been possible to assign a cultural-period for the site.

42 Sa 6083 Elev. 2145m (7040 ft.) This site is but one of a series of small to medium sized lithic scatters found on a ridge along the western edge of the section. A very gradual slope gives this site an easterly orientation while the residual soil remains undisturbed by erosion. Measuring 25 meters north-south and 20 meters east-west, the site is located in a fairly dense juniper-pinon stand with a saltbush understory. Lithics were confined to secondary flakes of chert and a few blade forms. No cultural identification was possible.

42 Sa 6084 Elev. 2145m (7040 ft.) A rockshelter developed into a two room habitation unit with dry laid masonry. The slickrock over much of the area falls to the SE at about 15° . Above and to the sides of the shelter area, the cover is one of juniper-pinon and saltbush. Lithics were confined to a core and blades while a diagnostic sample of sherds included Mesa Verde B/W suggesting a Pueblo II affiliation.

Quad 492. (Sec. 23 SW 1/4, T33S, R17E) This quadrant is situated at the head of Young Canyon where the fairly level land is 50% covered by a juniper-pinon overstory with 35% in desert shrub. The balance is a wasteland of cliffs and talus slopes. The seven sites recorded mostly reveal a Pueblo III affiliation and were located either in the forested area or at the base of the cliffs just above the brush flats. (Marker was located.)
 JUNIPER-PINON.



42 Sa 6070 Elev. 2170m (7120 ft.) This possible camp site measures 50 meters east-west by 30 meters north-south. The site is on a ridge overlooking the head of Young Canyon. Its residual soil remains free of erosion while the open juniper-pinon stand covers an understory of sage brush and rabbit brush. Cultural material include a point fragment and a mano as well as secondary and tertiary flakes. Despite this, a cultural determination cannot be fixed.

42 Sa 6071 Elev. 2145m (7040 ft.) Three possible fire pits with associated charcoal suggest a camp site. Located on a canyon rim, the site measures only 4 meters square while there does not appear to have been any erosion. Juniper and pinon are associated with rabbit brush and mountain berry. Of the three fire pits, one shows some stone in circular alignment, the second displays broken slabs while the third fire area is merely suggested by a carbon stain. No other cultural material was found at the site and a culture period cannot be assigned.

42 Sa 6072 Elev. 2121m (6960 ft.) This apparent habitation site centers on a small overhang with a nearly disintegrated windbreak in front of it. Ceramic and lithic material appear to be washing from the feature which faces about south. The 8 meter square site is located on a bench above the floor of the upper reaches of Young's Canyon. Here rabbit brush, sage brush, cactus and some wild grasses underlie the juniper-pinon overstory. Secondary flakes, a hammerstone and a blade constitute the lithic sample while sherds include Cortez B/W and a sherd of Mancos Gray. This combination would suggest an early Pueblo II affiliation--perhaps shortly after 900 A.D.

42 Sa 6073 Elev. 2133m (7000 ft.) This habitation and/or storage site is centered on a series of water-worn holes in the sandstone cliff face in a site area measuring 30 meters north-south and 5 meters east-west. The site faces west while the aeolian soil in front slopes down at about 5°. There are eight small shelters modified by the erection of masonry walls set in heavy adobe mortar. Some may have been used either for habitation or for storage. The ceiling of one is clearly fire-blackened. The juniper-pinon forest is joined by mountain mahogany, sage brush and wild grasses. Lithics included only secondary flakes while the plain gray ware is the only ceramic form. It thus is possible to say that the site is Anasazi but that its temporal position is uncertain.

42 Sa 6074 Elev. 2133m (7000 ft.) This structural site is contained within a 35 meter square. The residual soil slopes down at 3° to the west. Situated in a clearing among juniper-pinon sage brush is the dominant plant on the site. Two or three rooms of masonry are associated with a circular pit and with a trash mound which contains a substantial quantity of charcoal. Erosion has effectively destroyed much of the trash mound while the structural walls have also suffered considerable deterioration. Lithic materials included secondary flakes of chert, blades, knife fragments and a mano. Ceramics examined include Mancos B/W and 2 sherds of a Hovenweep variety. Ceramics would appear to place the site in Late Pueblo II.

42 Sa 6075 Elev. 2133m (7000 ft.) Contained within an area 60 meters north-south and 50 meters east-west includes a multi-room habitation unit with associated granaries and a trash mound. The residual soil affords a nearly level surface although the site orientation appears to be towards the SE. The site is in a juniper-pinon

42 Sa 6075 (Cont) area in the first ledges just above the floor of Young's Canyon. Sage brush and rabbit brush are also present. Essentially, two room blocks occur. A walled habitation area is developed from an overhang and has a granary and trash area in association. The northern room block contains one or two large rooms. This northern element has been heavily vandalized while the one to the south appears to be undisturbed. The lithic material included secondary and primary flakes, hammerstones, projectile points, and manos. The ceramics include Mesa Verde B/W, Mesa Verde Corrugated, Mancos B/W, Cortex B/W and McElmo Corrugated. Ceramics would seem to place the site in late Pueblo II through early Pueblo III.

42 Sa 6076 Elev. 2121m (6960 ft.) This habitation site is limited to a 4 meter square. The residual soil slopes very slightly to the SE. The characteristic vegetation is juniper-pinon and sage brush. Although no hearth area could be identified, fireblackened rock is present. The structural element was developed in a small rockshelter which appears to have been used only for a short period of time. In addition to a few secondary flakes, Mesa Verde B/W and unidentified corrugated seem to place the site in Pueblo III times.

42 Sa 6077 Elev. 2109m (6920 ft.) An apparent chipping site measuring 15 meters square, it is found on a mesa top in a juniper-pinon woodland area with a 4° slope. A knife fragment and primary and secondary flakes of chert constituted the only cultural material noted and thus the site could not be assigned either a cultural or a temporal position.

INDIAN CREEK PLANNING UNIT SITES RECORDED OUTSIDE QUADRANTS

42 Sa 6023 (Sec. 19 SW 1/4 T29S, R25E) Elev. 1999m (6560 ft.) A light lithic scatter that occupies an area of 30 meters square on a talus slope facing east at 150°. The slope of more than six degrees has caused the sand and rock to erode considerably. There are a few juniper and pinon on the site while sage is also present. The site consists of primary chert and quartzite flakes, and has likely been disturbed by relic collection as there are several piles of flakes. The cultural material observed is not sufficient for further cultural determination.

42 Sa 6024 (Sec. 19 SW 1/4, T29S, R25E) Elev. 2001m (6565 ft.)
An extensive lithic scatter is located in an area 50 meters north-south by 150 meters east-west. Occupying the south slope of a wash, the site faces north at 350°. The sandy clay soil shows considerable erosion. A fence cuts through the site and several piles of flakes have been made by relic hunters. Except for the cleared fence area, the site sits in a moderately dense juniper-pinon forest with considerable sage and snake weed forming the understory. Several concentrations of various sized detritus are present. Cultural affiliation could not be determined due to insufficient diagnostic materials.

42 Sa 6025 (Sec. 19 SW 1/4, T29S, R25E) Elev. 2008m (6590 ft.)
A small lithic scatter is contained within an area 15 meters north-south by 25 meters east-west on a ridge line. The site faces east and looks into an arroyo. Soil is a rocky sand which is eroding rather rapidly. Vegetation consists of a few pinon in the site while mixed juniper-pinon, sage and curly grass occur outside the site area. Cultural materials consist of a few secondary chert flakes. Lithic materials present were not diagnostic.

42 Sa 6026 (Sec. 19 SW 1/4, T29S, R25E) 1987m (6520 ft.) The site is ten meters east-west by 25 meters north-south and occupies the south face of a slope looking north at 20°. The north end is cut by a small arroyo and erosion has redeposited some of the lithic material. The site is in a moderately dense juniper-pinon stand with sage, various grasses and snake weed also present. The area has a few dozen chert flakes, but no diagnostic tool forms.

42 Sa 6041 (Sec. 22 NW 1/4, T31S, R21E) Elev. 1609m (5280 ft.)
This petroglyph site is just south of Quadrant 30 in the SW 1/4 of Sec. 15. The design covers a two meter spread at the base of a cliff at the edge of brushland characterized by bitterbrush and ephedra although scattered juniper and pinon can be seen. The rock surface on which the design appears is facing west. Although no other cultural material exists in association, the consensus was that the neckless, trapezoidal anthropomorph was in an Anasazi style, perhaps as early as Basket Maker II or III.

42 Sa 6044 Sec. 22 NW 1/4, T31S, R21E) Elev. 1957m (6420 ft.)
A storage and possible habitation site located just south of Quad. 30 which is in Sec. 15, SW 1/4. Structural evidence is a cist measuring 1 x 1 meters located on a mesa top with a gentle 2° slope down to the east. While juniper and pinon form the primary overstory, clumps of oak are also noted. Grasses form the understory on what appears to be an alluvial soil. The cist is located in association with a few chert flakes in a sand dune area. Some charcoal was evident in the NE corner of the cist but was left undisturbed. A mano and a few flakes were found some 100 meters south of the site but were not clearly in association with it. No precise cultural assignment could be made.

CHAPTER IV. PATTERNS IN CANYONLANDS PREHISTORY

While the Four Corners area has been recognized for more than a century and a quarter as a region rich in the evidence of prehistoric man, it is also true that the Utah portion of this area was long neglected by archeologists who focused their energy on the large and spectacular sites in Colorado, New Mexico, and Arizona. Until the late 1950s, serious excavation was reported in southeastern Utah only by Prudden (1918) and by Brew (1946). The preoccupation with larger sites in other states apparently combined with the generally greater difficulty of access to the Utah area to make the region seem to be less rewarding in terms of return for time and money invested.

When Brew reported his 1931-33 work on Alkali Ridge (1946), he summarized the history of archeological research in southeastern Utah as having been confined to a series of hurried sorties into various parts of the area which remained unreported or reported sketchily at best. Others have recounted the work prior to 1950 (Tobin, 1947, Patterson, 1975) have followed Brew rather closely because there was so little that could be added.

By the mid 1950s, however, the first signs of change were evident. There was a growing awareness within the state that Utah's abundant mineral and recreational resources remained substantially untapped. Symptomatic of the rising concern for recreational as well as scientific values of cultural resources were the brief reports of Alice Hunt (Hunt, 1952, Hunt and Wilson, 1952) which urged the protection of sites in Horse Canyon and called for an intensive survey of the Indian Creek drainage in San Juan County. Hunt (1953) followed these efforts with a much more ambitious survey of the LaSal Mountains, the results of which she published in a thoughtful and incisive report.

Sensitive to these same developments as well as to the needs of local stockmen, the Bureau of Land Management built a road into Beef Basin in 1950 and, four years later, following a limited survey in 1953, Jack Rudy of the University of Utah excavated 9 small sites in the basin (Rudy, 1955). In 1959, Pierson reported on the archeological resources of the Needles area which is now included within Canyonlands National Park. In that same year William Thompson popularized a report of the archeological resources of the Fable Valley area which now lies just south of the same park.

While these reports perhaps presaged an increase in archeological research in southeastern Utah, nothing contributed so much to the expansion of knowledge of regional prehistory as the decision to build the Glen Canyon Dam. The University of Utah entered into an agreement with the Department of the Interior to undertake the requisite archeological surveys and to follow up this work with selected excavations in the upper Glen Canyon area. Under the direction of Jesse D. Jennings, the Glen Canyon project produced a series of excellent survey and excavation reports remarkable for the promptness with which they appeared.

While a great deal of the University of Utah's Glen Canyon work dealt with the right bank tributaries, a number of significant publications reported the archeology of the left bank within San Juan County. Of particular significance to the concerns of this study was Fowler's (1959) report of the Glen Canyon Main Stem Survey and Weller's (1959) record of a survey of the San Juan Triangle. Relevant excavation reports that followed the survey accounts included those by Lipe (1959, 1960), and by Sharrock (1961, 1963, and 1964).

At the request of the Forest Service, meanwhile, Gunnerson (1962) surveyed the Hammond Canyon tributary of Cottonwood Canyon west of Blanding. Schroeder (1965) excavated two small sites on the route of an access road to Natural Bridges National Monument. In 1965 the University of Utah conducted an archeological survey of Canyonlands National Park (Sharrock, 1966) and the following year Marwitt (1967) completed a preliminary survey by air of portions of the Manti-LaSal National Forest.

A new direction appeared in archeological research within the area when, in 1969, Brigham Young University began an annual summer archeological field school in Montezuma Canyon east of Blanding. Under the direction of Ray Matheny, who had done earlier survey work in the area (Forsythe, 1972), this program picked up threads of research first exposed by Brew. In recent years a number of good reports have emerged from this undertaking in the form of M. A. theses such as those of Forsythe, 1972), Patterson (1975), Miller (1976), Wikle (1976), and Harmon (1977).

Another "academic" research program also entered the area in 1969 when Lipe and Matson (1974) began preliminary work on Cedar Mesa which, by 1972, developed into a well-designed and integrated project capable of yielding maximum knowledge of prehistoric human behavior from data based primarily upon detailed survey reporting. In addition to reports by the senior researchers, at least one M. A. thesis (Camilli, 1975) has already emerged from the work. The project also provides a solid research basis upon which subsequent contract work in the area can draw and to which it can contribute. Notable in this respect are the survey and excavations

carried out by the University of Utah on the U-95 highway project across the northern edge of Cedar Mesa (Dalley, 1973; Wilson, 1974). Also relevant were reports of the Forest Service's Elk Ridge survey centered just north of Cedar Mesa (DeBloois, 1975; Dykman, 1976; Louthan, 1977).

New information concerning the settlement distribution of the Mesa Verde Anasazi emerged from the BLM survey of Fike and Lindsay (1976) which covered portions of the Bluff Bench area along the San Juan River as well as parts of White Mesa south of Blanding. This information was supplemented by a smaller project on White Mesa directed by Thompson (1977).

In the northern part of the project area, meanwhile, a limited Forest Service sample of the cultural resources of the LaSal Mountains (Green, 1974) confirmed older information while Michael Berry (1975) of the State Division of History added new sites to those already known in Arches National Park. Finally, LaMar Lindsay, Assistant State Archeologist, has recently completed an updated summary of what is known of the antiquities of Grand County (1976), Utah which brings together important information bearing on the boundary between the Anasazi to the south and the Fremont peoples to the north.

The literature cited in this brief discussion of research relevant to the present project represents only the core of a somewhat larger body of material. It is sufficient, however, to produce an outline of what is known of the prehistory of the region. The results of such a synthesis does much to place the findings of this project in a larger and a more meaningful context.

The geographic area to be considered is actually an expansion of the San Juan Triangle concept. It is here seen as being formed by the courses of the Colorado and the San Juan Rivers with an eastern boundary extending along the Utah-Colorado line from the Colorado River in the north to the San Juan in the south.

Beginning in the west, Fowler (1959) reported that workers in the Glen Canyon main stem survey found both Kayenta and Mesa Verde sherds on both the right and the left banks of the river but that Kayenta ceramics were clearly dominant on both banks. He suggested that the dominating Kayenta influence penetrated about 10 miles east of the left bank and that it extended as far upstream at Hite. Subsequent excavation of selected sites seems to have validated his view.

Lipe (1960) noted that left bank excavations divided the occupation into three periods. The first covered the time up to 1000 A. D. For this period only the lower levels of two sites were identified as relevant. For the Pueblo II-III period between 1000 and 1200 he said that the area was most commonly used for camp sites while dwellings were rather rare. Finally, between 1200 and 1300 A. D. there were more dwellings and the dwellings were larger and more variable in structural form. Lipe believed the data indicated that there had been a Kayenta expansion upstream between 1000 and 1200 followed by a partial Kayenta withdrawal after 1200.

Sharrock (1961) excavated sites in Lake Canyon during the 1960 season. Here he found evidence in the ceramic mixture that Mesa Verde and Kayenta peoples must have lived harmoniously in close proximity. While there was some occupation in the early part of Pueblo II, settlement was primarily late Pueblo II and Pueblo III. Sharrock believed that this meant that the area was settled under the impetus of population pressure from other areas. Since most Glen Canyon projects were dated by ceramic cross-dating methods, Sharrock also cast doubts on some of his own dating as well as that of others when he observed that he had found Pueblo II and Pueblo III sherds in thorough mixture at one point while, in another instance, he found Pueblo III sherds beneath Pueblo II sherds.

In reporting his 1961 excavations in Moqui Canyon, Sharrock (1963) noted that Mesa Verde influence was stronger here than in other left bank canyons. Even then, however, Kayenta influence remained dominant near the mouth of the canyon. Basket Maker II was identified in one instance but the balance of the occupation was confined to Pueblo II and to Pueblo III although Sharrock thought there might have been a hiatus between the latter two occupations. His continuing mistrust of the reliability of ceramic cross-dating was manifest in his complaint that the ceramics included in a single burial contained a 300 year gap between the terminal date for the earliest type found in the collection and the beginning date for the manufacture of the latest type identified in the same collection.

A year later Sharrock (1964) reported that there were no good dates for the main stem of Glen Canyon earlier than 1000 A. D. and that most sites fell into the period between 1200 and 1300 A. D. He was increasingly convinced that, despite the presence of a few habitation sites, the main stem functioned primarily as a transient route to areas well up the right bank canyons where Kayenta people settled as far away from the Colorado River as the Coombs site at Boulder, Utah. A surprising observation resulted from the excavation of two sites in the left bank Slickrock Canyon. Since the canyon was only 2 1/2 miles long, Kayenta domination was expected but excavation revealed both sites to be predominantly Mesa Verde.

Also in 1962, the University of Utah excavated four sites further east in the area of Castle Wash and Steer Pasture (Sharrock, 1964). Three of these sites proved to be late Pueblo II and Pueblo III while one was basically Pueblo II. The Pueblo II site produced 98.2% Kayenta ceramics while the slightly later sites produced Kayenta and Mesa Verde ceramics in about equal quantity. For Sharrock this argued an initial Kayenta penetration up Castle Wash followed by the arrival of Mesa Verdean peoples from the east who settled in the area without causing a Kayenta withdrawal.

Two sites were also excavated on Cedar Mesa. One proved to be Basket Maker III - Pueblo I while the other was Pueblo III. A Pueblo II site was also tested and thus a lengthy occupation of Cedar Mesa seemed to be established. The occupation here was basically a Mesa Verdean one although there was some evidence of Kayenta influence.

Despite the fact that Schroeder (1965) excavated what he identified as two Basket Maker III - Pueblo I storage sites along a new access road to Natural Bridges National Monument, Dalley's work (1973) along Highway U-95 seemed to indicate that Pueblo I was the most poorly represented stage in the Cedar Mesa sequence. His excavations included work on two Basket Maker III sites, a rather tenuous Pueblo I site and a number of Pueblo II and Pueblo III sites.

As a result of the continuation of the U-95 project a year later, Wilson found essentially the same situation that Dalley had encountered in that he could find no real evidence of Pueblo I although other periods seemed to be fairly well represented. Wilson did amend Dalley, however, in that he found fair amounts of Kayenta ceramics in Pueblo II and especially in Pueblo III. The limited evidence of Pueblo I on Cedar Mesa and in surrounding areas thus remained enigmatic. Although Gunnerson (1962) reported that he found an occupation extending from Late Pueblo I through Pueblo II in Hammond Canyon, that locale is somewhat further east and may be indicative of different conditions. There is also the fact that the Pueblo I - Pueblo II distinction is sometimes almost as difficult to make without excavation as is the distinction between Pueblo II and Pueblo III.

Lipe and Matson (1974) also reported that, after two years of systematic sampling on Cedar Mesa, they found Basket Maker II sites to be abundant both on the mesa tops and in the canyons. While Basket Maker III sites were noted on the mesa tops and a few occurred in the canyons, they proved rather rare in relation to sites of other periods represented in the sample. Pueblo I and early Pueblo II were almost entirely missing. In late Pueblo II and early Pueblo III there was a strong

occupation on the mesa top but very few sites were recorded in the canyons. By mid Pueblo III, however, the canyons were heavily occupied and then, by late Pueblo III, the region was abandoned. While all of the sites were overwhelmingly in the Mesa Verde Anasazi tradition, a significant Kayenta ceramic influence could be detected in late Pueblo II. This receded during early Pueblo III (Camilli, 1975).

Rudy (1955) also failed to find Pueblo I in Beef Basin. One of his excavated sites may be Basket Maker but most are clearly Pueblo II-III as indicated by Bannister's (Sharrock, 1964) analysis of three dendro samples. But if Rudy failed to find Pueblo I, Marwitt's (1967) air survey of parts of the Manti LaSal National Forest did little more than establish the existence of sites in quantity. Limited ground work did identify the inhabitants of the survey area as Mesa Verde Anasazi mostly of Pueblo II and Pueblo III times although one proved to be a Basket Maker III site. Ironically, Marwit commented that, while Hunt had found no masonry sites above 6000 feet in the LaSal Mountains, he had observed a good number of masonry structures at elevations greater than 7000 feet in the Elk Ridge area.

Marwitt had observed sites of particular significance but the fact that his observations were made from the air meant that it would be almost a decade before their importance would be revealed. Ultimately, however, DeBlois, (1975) initiated a sampling survey in the Elk Ridge area. The first year of the project recorded a total of 606 sites. Of this number, 16 were Basket Maker II, 72 were judged to be Basket Maker III, and 142 were assigned to Pueblo II while only 42 sites could be placed in Pueblo III. The remaining 334 sites, a startling 55% of the total, were identified as Pueblo I. A substantial part of the sites recorded were among the masonry sites Marwitt noted as being above 7000 feet.

Despite the fact that these sites were found at very high elevations, DeBlois was convinced that the structures indicated the presence of horticultural populations. Dykman (1976), reporting on the 1972 phase of this project which concentrated in the Chippean Ridge area, agreed that the durable nature of the structures would seem to argue that Pueblo I people had remained in the area all through the year. He wondered, however, if these dwellings might, with equal logic, be seen as seasonal facilities used repeatedly over a long period of time. He commented that flint knapping resources had to be brought into the area, probably as decorticated cores, and he noted that the points and the butchering tools were indicative of the exploitation of animal resources. Ground tools could argue the use of natural plant foods rather than cultigens.

Lipe and Matson (1974), Dalley (1973), and Wilson (1974) all noted the virtual absence of a Pueblo I and early Pueblo II occupation on Cedar Mesa. It remained for Louthan (1977) to argue specifically that the area of the Elk Ridge project accounted for the hiatus in the Anasazi occupation of Cedar Mesa. Using the same 1972 survey data from the Chippean Ridge area that Dykman had employed for his lithic study, Louthan's site analysis resulted in the presentation of a strong case for a permanent, year round occupation of the sites.

Louthan reported a striking similarity in the findings of the 1971 and the 1972 surveys. The 1972 project recorded 677 sites of which only two were suggested as Basket Maker II while 32 were thought to be Basket Maker III. Some 18 sites were categorized as Basket Maker III-Pueblo I while 90 sites represent Pueblo II and 96 sites fell into the Pueblo II-III range. Only 30 sites were ascribed to Pueblo III. For Pueblo I, however, a total of 232 sites, some 34% of the total, were identified.

Louthan rightly sees the size and the distribution of sites at Chippean Ridge (and, by implication, in other parts of the project area) as indicative of ecological adaptations which may have prompted some change in social patterns rather than the reverse. Certainly this interpretation is supported by the evidence of two lengthy droughts documented for the Ninth Century A.D. Without going into detail, the preponderance of one and two room structures would also support the idea of an adaptive strategy designed to take advantage of higher levels of effective moisture in an area where suitable farm land was most often found in small and scattered pockets.

In comparing the sites of the Bluff Bench/San Juan River area with those on White Mesa, Fike and Lindsay (1976) found the heaviest concentration of sites in the Bluff Bench area to be in the Archaic, Basket Maker II, Basket Maker III, and in the Pueblo I periods. Pueblo II sites seemed to be about equally distributed between Bluff Bench and White Mesa while they reported a striking Pueblo III domination on White Mesa. The writers reasoned that the San Juan River environment afforded the greatest variety of flora for gathering peoples but that, with the increased role of horticulture, dry farming would be more productive on White Mesa where greater rainfall obtained. It should be noted, however, that if the Pueblo I sites found on Bluff Bench do not represent a riverine adaptation, their presence there would appear to contradict the explanation offered for the Basket Maker III - Pueblo I shift from Cedar Mesa to the Elk Ridge project area.

Thompson (1977) subsequently examined the equivalent of two sections of land on White Mesa just north of the Fike and Lindsay project area. Basing his interpretation on Alan Spencer's ceramic analysis, Thompson suggested that the White Mesa population attained peak density about mid-way

through Pueblo I and that this density persisted well into Pueblo II. This model would seem to suggest that White Mesa played a role somewhat analagous to that of the Elk Ridge area during the same period of time.

At first it appeared that the small sites of Pueblo III affiliation recorded in Thompson's sample indicated that the area did not experience the Pueblo III nucleation characteristic of Mesa Verde areas further east. This view was altered rather abruptly by the chance observation of a large cliff pueblo just outside the project area. The cliff pueblo suggested that the small size of the Pueblo III sites on White Mesa did not result from a persistence of Pueblo II trends into Pueblo III but rather they were evidence of Haury's (1956) "farm houses" which, though limited to one or two rooms, are actually diagnostic of Pueblo III nucleation.

Brew (1946) rejoiced that his work on Alkali Ridge had resulted in the excavation of an occupation sequence extending from Basket Maker III through Pueblo III. While his pride is pardonable, the work of Brigham Young University in Montezuma Canyon emphasizes the point that Brew's mesa top sequence would not illuminate the adaptive strategies employed in other parts of an area of great topographical and ecological diversity.

Noting that only two Basket Maker II sites had been identified in Montezuma Canyon, Wikle (1976) divided the canyon into northern and southern segments with the dividing line placed at the mouth of Deadman's Canyon. He observed that the northern half was narrow and flanked by high walls while the southern portion was broader and had much lower walls. Wikle estimated that the southern half of the canyon probably had twice the Basket Maker III population found in the north. During the Pueblo I period he estimated that the population increased by 60% in the south and by 100% in the north. This meant, of course, that the population was still greater in the south. Although he made no further estimates for the Pueblo II and III periods, the impression is that the populations were nearly equal in size in the northern and southern parts.

The temporal depth of the Montezuma Canyon occupation is evidenced by the lengthy ceramic sequence derived from survey collections and analyzed by Forsythe (1972). Excavations reported by Patterson (1975) and by Harmon (1977) cover Pueblo I occupations as well as some of the transition to Pueblo II. Miller's (1976) excellent analysis of the Prudden Unit structural form provides valuable insights. Noting the lack of evidence of habitation, Miller's work is suggestive of socio-economic organization although he was apparently unwilling to follow Plog (1974) to the point of postulating a redistributive role for the kiva even though Plog is in his bibliography. Certainly the absence of evidence of habitation functions in the Prudden Unit would at least suggest a redistributive function for a group of surface rooms associated with a kiva.

It is as yet not clear at just what point the high density of Formative sites begins to diminish as one moves north. In the region east of Comb Ridge the site density appears, in general at least, to remain high even to the north of the latitude passing through Blanding. By the time the Monticello latitude is reached, however, Formative site density has dropped sharply. West of the Abajo Mountains, meanwhile a substantial density of Mesa Verde sites appears to push further north. When Rudy spoke of the high density of Beef Basin sites as running around 3.8 sites per square mile, he significantly understated the site density now known for that area. Hunt (1952) argued, of course, that a good site count occurred in Horse Canyon. Pierson (1959) reported that a high density of sites would be found in the Needles area.

Sharrock (1966) took a different view, however. Summarizing the results of a survey in Canyonlands National Park, he declared that, of the 239 sites known, the number of habitation sites was inordinately low although storage sites were fairly numerous. He found that the main occupation extended from 1075 A.D. to 1150 A.D. with some evidence of continued occupation as late as 1250 A.D. He calculated that, if all the dwellings in the Park were inhabited at the same time (rather unlikely) the total prehistoric population within the park would amount to only 276 people--a figure Sharrock felt certain was much too high.

During her survey of the LaSal Mountains, Alice Hunt (1953) identified three distinct ecological zones within which, she argued, there was evidence of five and possibly nine distinct occupations. She defined the zones as including the canyon regions below an elevation of 6000 feet, the juniper-pinon area between 6000 and 8000 feet, and the mountain heights extending above 8000 feet in an essentially alpine environment.

According to Hunt, the high mountain country produced 119 sites, all of which were camp sites located on the forested edges of meadows and all of which seemed to represent single family or small group seasonal hunting and gathering. All but one of the 84 sites in the juniper-pinon zones proved to be camp sites at which the cultural materials included some characteristic of the higher camps and some which were found at canyon sites. In the canyons, meanwhile, 151 sites were divided into three types. These were (1) sites with masonry, petroglyphs, small projectile points and fairly abundant pottery; (2) non-ceramic camp sites with artifacts similar to those found in the mountain sites; and (3) camps with small quantities of yellowish sherds, small points, and little or no architecture.

Using limited ceramic data, a few diagnostic artifacts and, more particularly, the content of lithic assemblages, Hunt postulated her series of occupations. The five most clearly discernible groups were said to

include a preceramic lithic culture underlying ceramic sites, an extension of Anasazi influence based on ceramics and masonry, a possible prehistoric Hopi entrada indicated by what she believed to be Awatobi Yellow Ware, a Fremont occupation suggested by architecture, rock art, and the same yellow ware used to identify the Hopi, and an Historic Ute occupation. She further saw two much earlier occupations suggested in the finds of Angostura or Plainview points and in the discovery of Amargosa II points. She also postulated influence from eastern puebloan peoples and from the high plains as well.

Hunt's study is an exceptional attempt to extract maximum data from limited and rather nebulous resources. To disagree with some of her conclusions is, in no sense, to discredit her work. However they may be interpreted temporally or spatially, the patterns she identified have an inherent and significant reality. More recent studies do suggest some criticism. At this writing it would appear that Sharrock (1966) was right when he rejected the reports of Rudy (1955), Pierson (1959) and Hunt (1952, 1953), that the Fremont peoples penetrated this general area. He agreed that much of the rock art in the Canyonlands region appeared to have been copied wholesale from the Fremont but, beyond this, he found Fremont influence to be inconsequential. In a total collection of 1022 sherds from the Canyonlands survey, Sharrock reported 4 Kayenta types and eight from the Fremont. The balance of the collection was unquestionably of Mesa Verde affiliation.

On the basis of a rather limited sample, Green (1974) confirmed Hunt's (1953) assertion that no masonry sites were to be found in the LaSal Mountains above 6000 feet, but he also pointed out that nothing was found among the lithic scatters recorded that would indicate whether the sites were of Mesa Verde or of Fremont origin. Berry (1975) encountered an almost equal lack of diagnostic material in his brief survey of a part of Arches National Park the following year. He commented on an almost total absence of projectile points and he also complained that the 59 previously recorded sites produced 54 sherds while the 30 sites added during his survey produced only 7 sherds. Significantly, 38 of the sherds proved to be Pueblo II Mesa Verde sherds while the remaining 23 were associated with Paiute-Shoshone peoples.

In one of the most recent papers relevant to the project area, Lindsay (1976) has summarized the archeology of Grand County. His studies convinced him that areas of Mesa Verde and Fremont occupation are distinct and separate and that reports of joint Mesa Verde-Fremont occupation are in error. He sees the Fremont occupation dominating the northern part of the county and extending no further south than a few miles below the base of the Book Cliffs.

As for the Mesa Verde northward thrust, Lindsay noted the exception of 7 apparent Mesa Verde sites in Arches National Park and argued that the line of the Colorado and Dolores Rivers marked the northernmost point of Mesa Verde penetration. He further discounted evidence of Pueblo III activity and argued that the northern limits were reached in Pueblo II times and that this penetration was not sustained in Pueblo III.

According to Lindsay, the area between the Fremont and Mesa Verde Anasazi occupation zones should prove to be virtually devoid of sites. The results of the sampling survey of the Dolores Planning Unit contribute evidence which substantiates this view. In the seven quadrants allocated to the unit, which is entirely north of the Dolores River, only eight sites were recorded. All of these were modest lithic scatters totally devoid of diagnostic materials.

Ray Matheny of Brigham Young University is reported to have identified 51 lithic sites in a pre-chaining survey in the Dolores planning unit. (Bruce Louthan, personal communication, 1977.) Although the records of this project have been lost, there do not appear to have been any significant quantity of diagnostic materials collected or observed. While the information is thus somewhat imprecise, Matheny's sites may correlate with Toll's (1977) view that much of the lithic material he observed for some distance up the Dolores River in Colorado may have originated in the general area of the Dolores planning unit.

Toll also felt that he had evidence of a Fremont penetration along the Dolores somewhat to the southeast of its point of entry into Utah. His interpretation was based on rock art motifs, some structure forms, and locational patterning. Toll himself regarded this view as suggestive rather than demonstrated. This paper must take the position that the present state of knowledge supports Lindsay's view that the area lacks any evidence of a sustained Fremont or Mesa Verde penetration north of the Dolores.

It should be noted that Toll (1977) recorded only 12 sites in the final 20 miles of the Dolores River which lies within the state of Utah. The only diagnostic items recovered include the isolated find of the basal portion of a point that might be regarded as Pueblo II and a single sherd with a yellowish tinge which Toll terms Tusayan Gray.

In view of the comments of both Hunt and Toll concerning sherds with some yellow coloration, it should be noted that an apparently similar tint found in collections from Black Mesa in northeastern Arizona is regarded as evidence the pottery was coal fired. (Robert Euler. Personal communication, 1974.) This is not to suggest that similar sherds found in the general project

area come from Black Mesa. It does suggest, however, that coal occurs in a number of spots within the general region and quantities need not be of modern commercial value to have been significant to prehistoric potters. This merely adds another factor which might account for sherds tinged with yellow.

An examination of the site records accumulated during this project suggests the further propriety of defining the areas of the Castle Valley and the Indian Creek Planning units as only marginal Mesa Verde Anasazi. The evidence of human activity north of the Monticello latitude and, in particular, east of a line drawn from the Abajo Mountains to Moab, is of an extremely limited nature and the sample holds little promise that large bodies of diversified data will be obtained in the area.

Any discussion of the patterns that are evident should be prefaced, however, by a definition of the terms that have been used in the project. While these labels are in general use throughout much of the discipline, they are frequently subjected to nuances that make them specific to a particular problem or to the work of a specific individual.

The practice in this project has been to assign a functional term to a site on the basis of the kind of surface evidence which suggests its major role. This means, for example, that the term "chipping site," refers to any lithic scatter or assemblage involving fragments of siliceous stone modified by human agency. The site may or may not produce culturally or temporally diagnostic materials made of flaked stone. The term simply means that surface evidence indicates that the extraction of lithic resources and/or manufacture of flaked stone implements was the only function of the site. Chipping detritus can occur, and it usually does, at a habitation site. Such a site is classified, however, on the basis of the visible evidence of structures which suggest that habitation was functionally dominant over knapping activity.

Similarly, a camp site obtains its functional label on the basis of the fact that, while lithic detritus may be present, other evidence suggests that the site's focal importance was its role as a transient residence. A site has been called a "camp," when ash stains have been found in association with lithic or with other cultural material and it appears to be a reasonable assumption that the fire is not of natural origin. A "camp" designation is also applied when, even without the evidence of fire, flakes are associated with mano and metate fragments and/or with sherds. When any of these attributes cluster in the absence of visible structural features, the site is classed as a camp.

The assignment of functional labels to sites should not be taken to mean that this paper agrees with the assumption, perhaps too frequently made in some Southwestern work, that structures will invariably be manifest on the surface. This project has simply accepted the need to assign a provisional functional label to sites based on a common sense evaluation of surface evidence. It is always recognized that excavation might well alter the functional classification of a site.

Structural sites are identified as features made by man, either through the architectural modification of a natural feature such as a rockshelter, or a similarly immobile feature constructed entirely by human agency. Nearly all structural sites are classed either as "habitation," or as "storage", sites. The few exceptions would involve instances of isolated wall fragments where use could not be determined. Another case would involve the recording of retaining walls such as may commonly be found in the building of trincheria plots.

Size is an inexact but fairly useful index to the distinction between habitation and storage elements in survey work. A great many structural elements will clearly be too small to be dwellings while others are obviously large enough to house a number of persons. Reason dictates that the latter should provisionally be considered habitation units even though requisite features may not be visible. There is, of course, a gray zone wherein the distinction between a dwelling and a storage unit is difficult to make. Here the workers have taken into account trends noted earlier in the project and, where it has seemed wise, they have recorded their indecision.

The term "rock art," is self-explanatory. While this class of sites may include photographs as well as the locally more common petroglyphs, none of the former were recorded during this project. In some cases field workers have sought to assign cultural-temporal designations to these sites but in most instances they have thought it wise to forebear. Any assignment of a cultural designation to rock art that has been made in this report should be regarded as highly tentative.

The inclusion of a group of sites classed simply as "rockshelters," creates a situation in which a site may be listed more than once. The rockshelter concept does not represent a true functional definition but their inclusion is justified on the grounds that the use of shelters forms an important attribute in any adaptive strategy. It does mean, however, that a rockshelter may also be listed as a habitation, storage, or camp site as well.

Similarly, the survey has also established a category of "ceramic", sites. Once again this leads to a double recording of sites since ceramics may, of course, be associated with camps, storage structures, or with

habitation sites. The ceramic group is important because it is a major attribute diagnostic of the activity of Formative peoples and because so much of the ceramic evidence is useful in both cultural and temporal diagnostics.

The use of the well-known Pecos designations from Basket Maker II through Pueblo III gives the usual false impression of cultural and temporal certainty. At the same time, of course, the convenience that has kept these terms in use is obvious here since a single term not only denotes a cultural affiliation, it also suggests a temporal position within a very few hundred years. Caution is needed in accepting the identification of some sites as fitting within the Pecos framework. A number of sites have been identified on the basis of one or two sherds found at the location and, in two instances, a Pecos classification was assigned on the basis of projectile points that appeared to be clearly within that cultural framework.

Site records indicate that nine sites were placed in the Basket Maker II category. Two of these were petroglyph sites assigned this position on the basis of design style. Another might have been termed a camp site because of ash discoloration in limited areas of soil, but two depressions of a size that might indicate pit houses were also noted. These features combined with the complete absence of ceramics suggested the classification. The balance of the Basket Maker II sites were assigned for similar reasons but only after some work in the laboratory. In each case the site had been termed a camp on the basis of signs of ash and/or ground stone fragments. The notes revealed, however, that these sites also produced evidence of storage cists or slab-lined fire pits. Such features combined with the absence of ceramics suggested again the propriety of listing them as Basket Maker II sites.

The three sites assigned to Basket Maker III as well as those ascribed to the Pueblo periods were all classified on the basis of ceramics although as noted, in some cases the ceramic sample was excessively small. Exceptions have occurred in the case of two rockshelters lacking ceramics but exhibiting coursed masonry. These have been designated simply as "Pueblo" as has one site which produced only good quality plain ware sherds.

Some explanation of two terms must be made. The term "Archaic," is used but once while the second term, "Paiute," is employed twice. The Late Archaic is generally thought to have begun some 6500 years ago and to have extended to perhaps as late as 1 A.D. or, in the Southwest, until the advent of Basket Maker II. This adaptive strategy has been the subject of much interest and discussion during the past two decades. The most readily identifiable indicators of this pattern as it is known in the west were long

thought to be a series of projectile points known as Gypsum, Pinto, Elko, Humbolt, and Bitter Root, to name but a few of the more prominent.

Research, reported within the last few years (Fowler, Madsen, and Hattori, 1973), has produced evidence that must not be ignored. Excavations in stratified rockshelters have shown that, while these and other points did develop and were used during the Late Archaic, the use of some forms persisted, either through imitation by later flint knappers or through reused finds, well into the Formative period. In some cases, various point forms have been found in late Pueblo II contexts. This means that many of these points have lost their value as cultural and temporal indicators. This is particularly true of surface finds but, even when these points are recovered in stratified excavation, it is the strata that assigns the position of the point rather than the point which indicates the cultural and temporal position of the strata.

The present survey emphasizes this position. Of the six Elko points recovered during this project, two were Elko eared, three were Elko corner-notched and one was an Elko side-notched. Two of the Elko corner-notched forms were recovered as random finds in the Castle Valley Planning unit while an Elko eared point was a random find in the Beef Basin Planning unit. Recovery under such circumstances might indicate the presence of the Archaic peoples in the area, as would the Elko eared point found at a flaking site in the northeastern part of the Indian Creek planning unit. As for the remaining two specimens, an Elko corner-notched comes in a surface collection from a Pueblo III site while the Elko side-notched point was found at a site with Pueblo II-III ceramics. Both sites are in the Beef Basin Planning unit.

All six of these points might be regarded as generalized evidence, either direct or indirect, that the Late Archaic adaptive strategy extended into the project area. Beyond, this, however, the points mean very little. It is with this caution in mind that one site is tentatively considered "Archaic". The site is a chipping station where a good specimen of the Elko eared form was recovered. Even this point could have been dropped by later users of the region. In the final analysis, local use by Archaic peoples is fully demonstrated only by controlled excavation in stratified contexts.

The use of the word "Paiute" may reflect the orientation of previous research experience, but other considerations also seem to justify its use. Two Southern Paiute diagnostics occur in the form of an occasional ceramic vessel and a small point known as the Desert Side-Notched form.

Thick-walled and generally conical in shape, the pots have been fired in a poorly controlled atmosphere which gives them a color range from brown through reddish to black. The temper is exceptionally coarse sand

in most cases although it is highly variable. The surface may display various patterns of crescent-shaped incisions that probably represent fingernail impressions.

The projectile points are well-made to the point of being delicate. Triangulate in form, they are rarely more than two centimeters in length and the width averages some 40% of the length. Small, deep side notches are cut into the margins of each side about one third of the point's length above the base. The base is concave and there is commonly a third notch extending upward from the center of the basal concavity.

In the eastern Great Basin and in much of Utah, the manufacture of the ceramic vessels and of this point form appears to have been restricted to the Southern Paiute and to the Western Shoshone. The reference to the Southern Paiute made in this paper should, however, be construed as including the Southern Ute. This position follows Goss (1965) who argues persuasively from glottochronology that the Southern Paiute and the Southern Utah have spoken separate languages for no more than 300 years and the time since their separation is probably even less than this. This should mean, of course, that Southern Paiute and Southern Ute would be archeologically indistinguishable until shortly before the beginning of the historic period. Thus Paiute diagnostics would apply to the Southern Ute as well. Two sites have been classed as Paiute. One in the Indian Creek planning unit is assigned this affiliation on the basis of a projectile point while a site in the Castle Valley unit is assigned the same affiliation on the basis of ceramics.

The primary advantage of the stratified, random sampling approach to an archeological survey is its ability to identify a multiplicity of environmental variables associated with sites. When the sample is sufficiently large, a pattern will usually emerge to show that various identifiable groups of variables will usually be found associated with sites of different cultures, different functions, and different temporal positions. While prior knowledge of the archeology of an area is usually advantageous, it is not an unmixed blessing. The stratified, random sampling approach not only provides the most efficient means of gaining insight into areas that are archeologically unknown, it is a valuable corrective to impressions gained through biased or nonrandom surveys.

It was noted earlier that the sample units for this survey were determined by plotting five vegetative zones on the planning unit maps, gridding each of the zones into quarter section squares and then, with a computerized table of random numbers, selecting quadrants for each zone. The number of sample units for each ecozone was intended to represent 1% of the total acreage estimated for that ecozone in the planning unit. The total number

of quadrants allocated to each planning unit was also to represent 1% of the total acreage in the planning unit.

It should be noted that there has been some criticism (Jennings, 1974) of survey methodologies that are stratified on the basis of modern ecozones. Objections are based on the very appropriate observation that these zones may not have been the same at various points in time in the prehistoric past. Others have replied that, if prehistoric sites show distributional patterns that correlate with contemporary ecozones, the correlation is culturally significant even though its full meaning may remain undetermined in the absence of excavation (Lipe and Thompson, 1976). There is the further fact that, if excavation data reveals the prior existence of ecozones different from those now present, an understanding of the changes that have taken place through time will require a knowledge of contemporary plant distributions as well.

Immediately following Figs. 2a and 2b will be found a series of four maps which plot the distribution of sites according to the functional categories previously discussed. The maps are listed as Figs. 3, 4, 5, and 6 with one map covering each of the four planning units. Following these are three maps, Figs. 7, 8, and 9, which plot the distribution of sites culturally and temporally. Since there are no sites assigned cultural affiliation or temporal position in the Dolores planning unit, no map is provided for that area.

While two sites have been labeled "Paiute," and one is termed "Archaic," the cultural distribution otherwise relates entirely to the Mesa Verde Anasazi which, within the project area, is well-represented in Basket Maker II but which suffers a 66% reduction in the number of sites in Basket Maker III. Predictably, Pueblo I is absent. The 16 Pueblo II sites are followed by 5 sites that represent a Pueblo II-III transition. Finally, 18 Pueblo III sites are also identified.

Following the functional classification of sites, the sites can be assessed, although only roughly, in terms of the amount of time and energy expended in activities suggested by the nature of the site. Thus the remains of a habitation site are diagnostic of many more hours of human activity than is the lithic scatter lacking midden. The site with storage facilities may be seen as representing a lower investment of time and energy than the habitation site but more than that associated with the camp site. The camp site, of course, is indicative of greater and more varied activity than the lithic scatter.

	INDIAN CREEK	CASTLE VALLEY	DOLORES	BEEF BASIN	TOTAL PROJECT
Total Acres	5120	2240	1120	1600	10,080
% of Project Area	50.8%	22.2%	11.1%	15.9%	100%
Total Sites	121	28	8	61	218
% of Project Sites	55.5%	12.8%	3.7%	28.0%	100%
Juniper-Pinon Acres	2194	813	323	733	4063
% in Juniper-Pinon	42.0%	36.0%	28.0%	46.0%	40.3%
Total Sites in Juniper-Pinon	101	15	2	24	142
% of Total Sites	83.5%	53.6%	25.0%	39.3%	65.1%
Brushland Acres	1962	522	622	460	3566
% in Brushland	38.0%	24.0%	56.0%	28.0%	35.7%
Total Sites in Brushland	20	13	6	37	76
% of Total Sites	16.5%	46.4%	75.0%	60.7%	34.9%
Wasteland Acres	964	905	175	407	2452
% in Wasteland	20.0%	40.0%	15.0%	26.0%	24.0%
Chipping Sites	103	21	8	18	150
% of Total Sites	85.1%	75.0%	100%	29.5%	68.8%
Chipping in Juniper-Pinon	89	14	2	7	112
Chipping in Brushland	14	7	6	11	38
J-P Chipping % of Total Sites	73.5%	50.0%	25.0%	11.47%	51.37%
Brush Chipping % of Total Sites	11.6%	25.0%	75.0%	18.03%	17.43%
J-P Chipping % of Chipping	86.4%	66.7%	25.0%	38.88%	74.66%
Brush Chipping % of Chipping	13.6%	33.3%	75.0%	61.12%	25.33%
Camp Sites	6	5	0	19	30
% of Total Sites	4.96%	17.8%	0	31.16%	13.76%
Camps in Juniper-Pinon	5	1	0	5	11
Camps in Brushland	1	4	0	14	19
J-P Camp % of Total Sites	4.13%	3.57%	0	8.2%	5.04%
Brush Camp % of Total Sites	0.93%	14.3%	0	22.95%	8.72%
J-P Camp % of Camp Sites	83.33%	20.0%	0	26.32%	36.66%
Brush Camp % of Camp Sites	16.66%	80.0%	0	73.68%	63.33%
Ceramic Sites	5	1	0	33	39
% of Total Sites	4.0%	3.57%	0	55.0%	17.88%
Ceramic Sites in Juniper-Pinon	4	0	0	13	17
Ceramic Sites in Brushland	1	1	0	20	22
J-P Ceramic Site % of Total Sites	3.3%	0	0	21.3%	7.8%
Brush Ceramic Site % of Total Sites	.82%	3.57%	0	32.8%	10.0%
J-P Ceramic Site % of Ceramic Sites	80.0%	0	0	39.4%	43.6%
Brush Ceramic Site % of Ceramic Sites	20.0%	100%	0	60.6%	56.4%
Habitation Sites	3	1	0	15	19
% of Total Sites	2.3%	3.57%	0	24.6%	8.7%
Habitation Sites in Juniper-Pinon	2	0	0	7	9
Habitation Sites in Brushland	1	1	0	8	10
J-P Habit. Site % of Total Sites	1.65%	0	0	11.47%	4.1%
Brush Habit. Site % of Total Sites	.82%	3.57%	0	13.11%	4.9%
J-P Habit Site % of Habit. Sites	66.7%	0	0	46.7%	47.36%
Brush Habit. Site % of Habit. Sites	33.3%	100%	0	53.3%	56.64%
Storage Sites	3	0	0	14	17
% of Total Sites	2.48%	0	0	22.95%	7.8%
Storage Sites in Juniper-Pinon	3	0	0	6	9
Storage Sites in Brushland	0	0	0	8	8
J-P Storage Site % of Total Sites	2.45%	0	0	9.83%	4.13%
Brush Storage Site % of Total Sites	0	0	0	13.12%	3.67%
J-P Storage Site % of Storage Sites	100%	0	0	42.86%	52.94%
Brush Storage Site % of Storage Sites	0	0	0	57.14%	47.06%

Fig. 2a. Distribution of Sites According to Function.

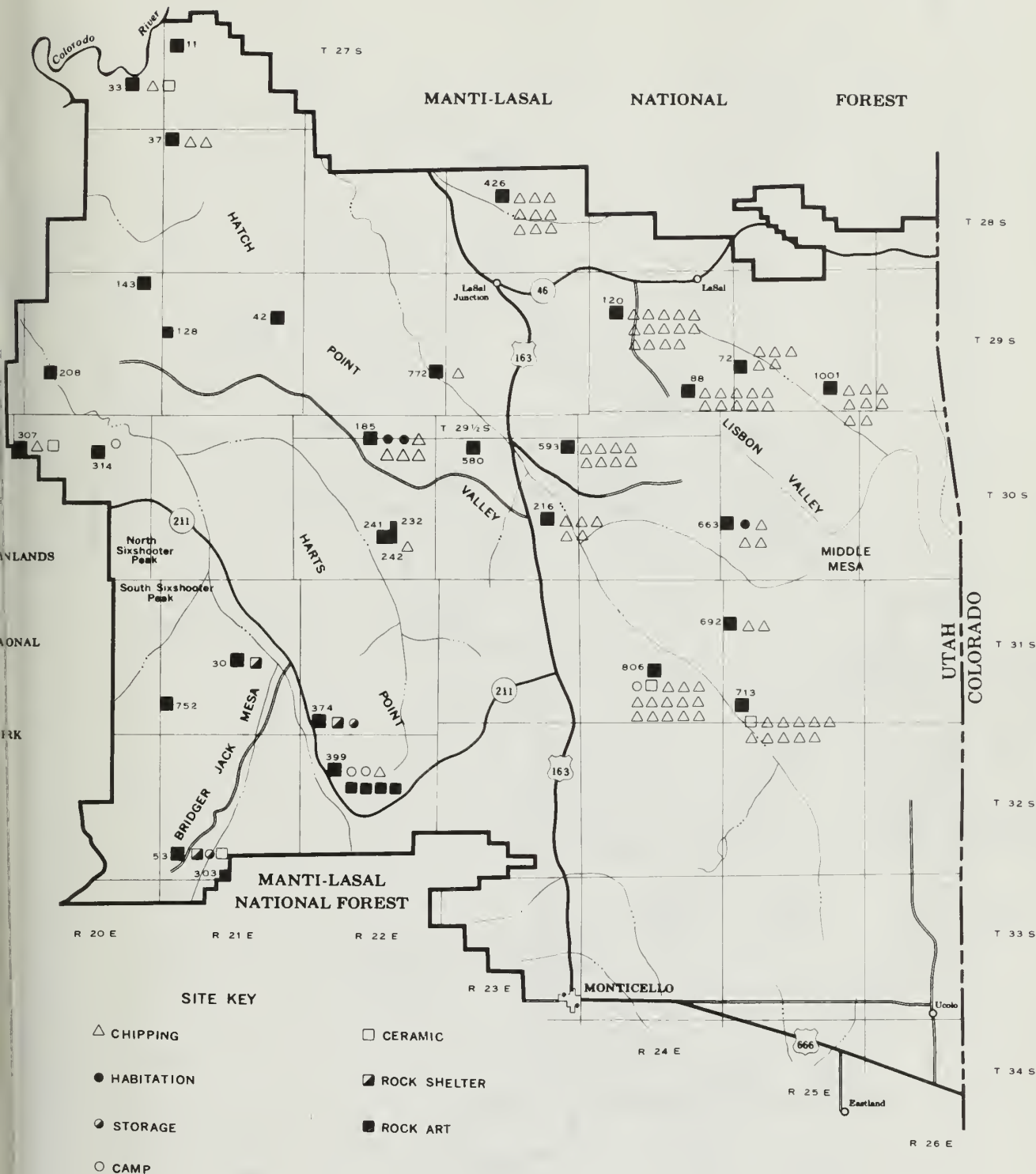
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Rockshelter Sites	3	5	0	17	25
% of Total Sites	2.3%	17.85%	0	27.86%	11.46%
Rockshelters in Juniper-Pinon	3	0	0	7	10
Rockshelters in Brushland	0	5	0	10	15
J-P Shelter % of Total Sites	2.3%	0	0	11.47%	4.58%
Brush Shelter % of Total Sites	0	17.85%	0	16.4%	6.88%
J-P Shelter % of Shelters	100%	0	0	42.2%	40.0%
Brush Shelter % of Shelters	0	100%	0	58.8%	60.0%
Rock Art Sites	7	1	0	0	8
% of Total Sites	5.8%	3.57%	0	0	3.66%
Rock Art in Juniper-Pinon	5	0	0	0	5
Rock Art in Brushland	2	1	0	0	3
J-P Rock Art % of Total Sites	4.0%	0	0	0	2.3%
Brush Rock Art % of Total Sites	.82%	3.57%	0	0	1.37%
J-P Rock Art % of Rock Art	71.4%	0	0	0	62.5%
Brush Rock Art % of Rock Art	28.6%	100%	0	0	37.5%

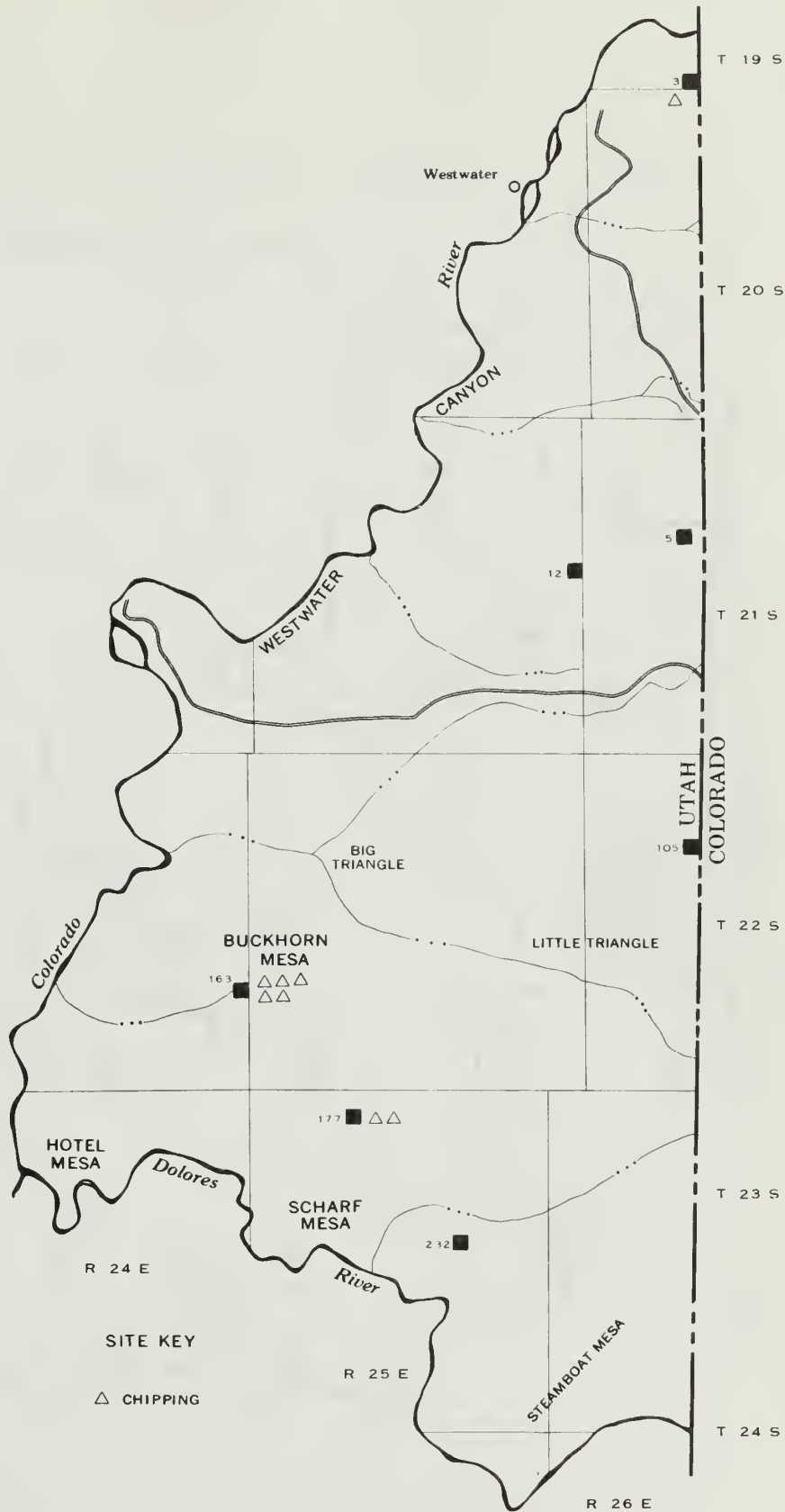
Fig. 2a. Distribution of Sites According to Function.

	INDIAN CREEK	CASTLE VALLEY	BEEF BASIN	TOTAL PROJECT
Basket Maker II Sites	3	2	4	9
% of Total Sites	2.48%	7.14%	6.56%	4.13%
BM II Sites in J-P	2	0	2	4
BM II Sites in Brush	1	2	2	5
J-P BM II % of Total Sites	1.65%	0	3.28%	1.83%
Brush BM II % of Total Sites	.83%	7.14%	3.28%	2.29%
J-P BM II % of BM II	66.67%	0	50.0%	44.44%
Brush BM II % of BM II	33.33%	100%	50.0%	55.56%
Basket Maker III Sites	0	1	2	3
% of Total Sites	0	3.57%	3.28%	1.38%
BM III Sites in J-P	0	0	1	1
BM III Sites in Brush	0	1	1	2
J-P BM III % of Total Sites	0	0	1.64%	.46%
Brush BM III % of Total Sites	0	.83%	1.64%	.92%
J-P BM III % of BM III Sites	0	0	50.0%	33.33%
Brush BM III % of BM III Sites	0	100%	50.0%	66.67%
Pueblo II Sites	4	0	12	16
% of Total Sites	3.3%	0	19.67%	19.67%
Pueblo II Sites in J-P	4	0	2	6
Pueblo II Sites in Brush	0	0	10	10
J-P Pueblo II % of Total Sites	3.3%	0	3.28%	2.75%
Brush Pueblo II % of Total Sites	0	0	16.39%	4.59%
J-P Pueblo II % of Pueblo II	100%	0	16.67%	37.5%
Brush Pueblo II % of Pueblo II	0	0	83.33%	62.5%
Pueblo II-III Sites	0	1	4	5
% of Total Sites	0	3.5%	6.56%	2.29%
Pueblo II-III in J-P	0	1	1	2
Pueblo II-III in Brush	0	0	3	3
J-P Pueblo II-III % of Total Sites	0	3.57%	1.64%	.92%
Brush Pueblo II-III % of Total Sites	0	0	4.92%	1.38%
J-P Pueblo II-III % of Pueblo II-III	0	100%	25.0%	40.0%
Brush Pueblo II-III % of Pueblo II-III	0	0	75.0%	60.0%
Pueblo III Sites	1	0	17	18
% of Total Sites	.83%	0	27.87%	8.26%
Pueblo III Sites in J-P	1	0	6	7
Pueblo III Sites in Brush	0	0	11	11
J-P Pueblo III % of Total Sites	.83%	0	9.83%	3.2%
Brush Pueblo III % of Total Sites	0	0	18.03%	5.04%
J-P Pueblo III % of Pueblo III	100%	0	35.29%	38.89%
Brush Pueblo III % of Pueblo III	0	0	64.7%	64.7%
Anasazi Sites	10	4	39	53
% of Total Sites	8.26%	14.28%	63.93%	24.32%
Anasazi Sites in J-P	9	1	13	23
Anasazi Sites in Brush	1	3	26	30
J-P Anasazi % of Total Sites	7.44%	3.57%	21.31%	10.55%
Brush Anasazi % of Total Sites	.83%	10.71%	42.62%	13.76%
J-P Anasazi % of Anasazi	90.0%	25.0%	33.33%	43.4%
Brush Anasazi % of Anasazi	10.0%	75.0%	66.67%	56.6%

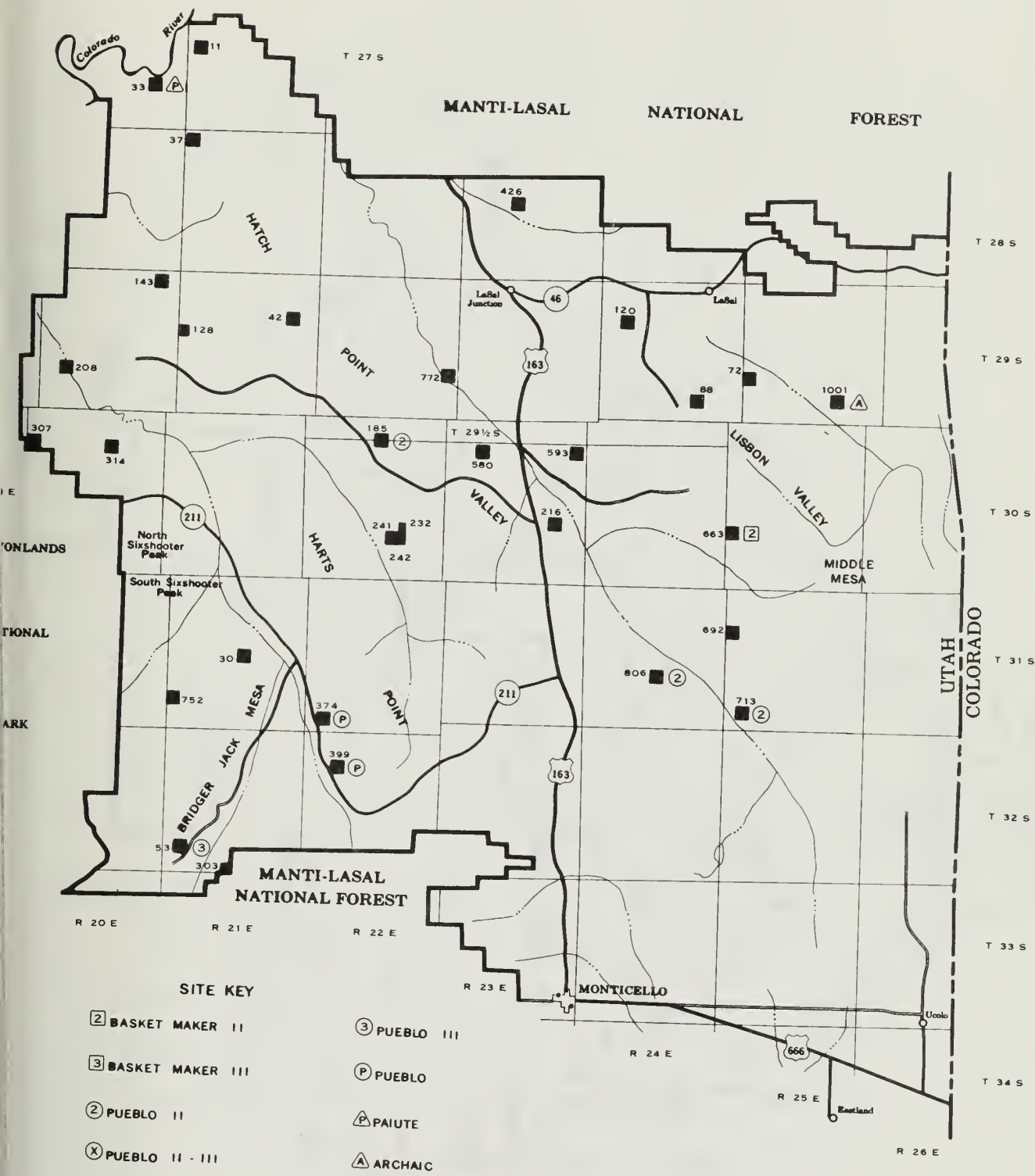
Fig. 2b. Distribution of sites according to cultural/temporal position.



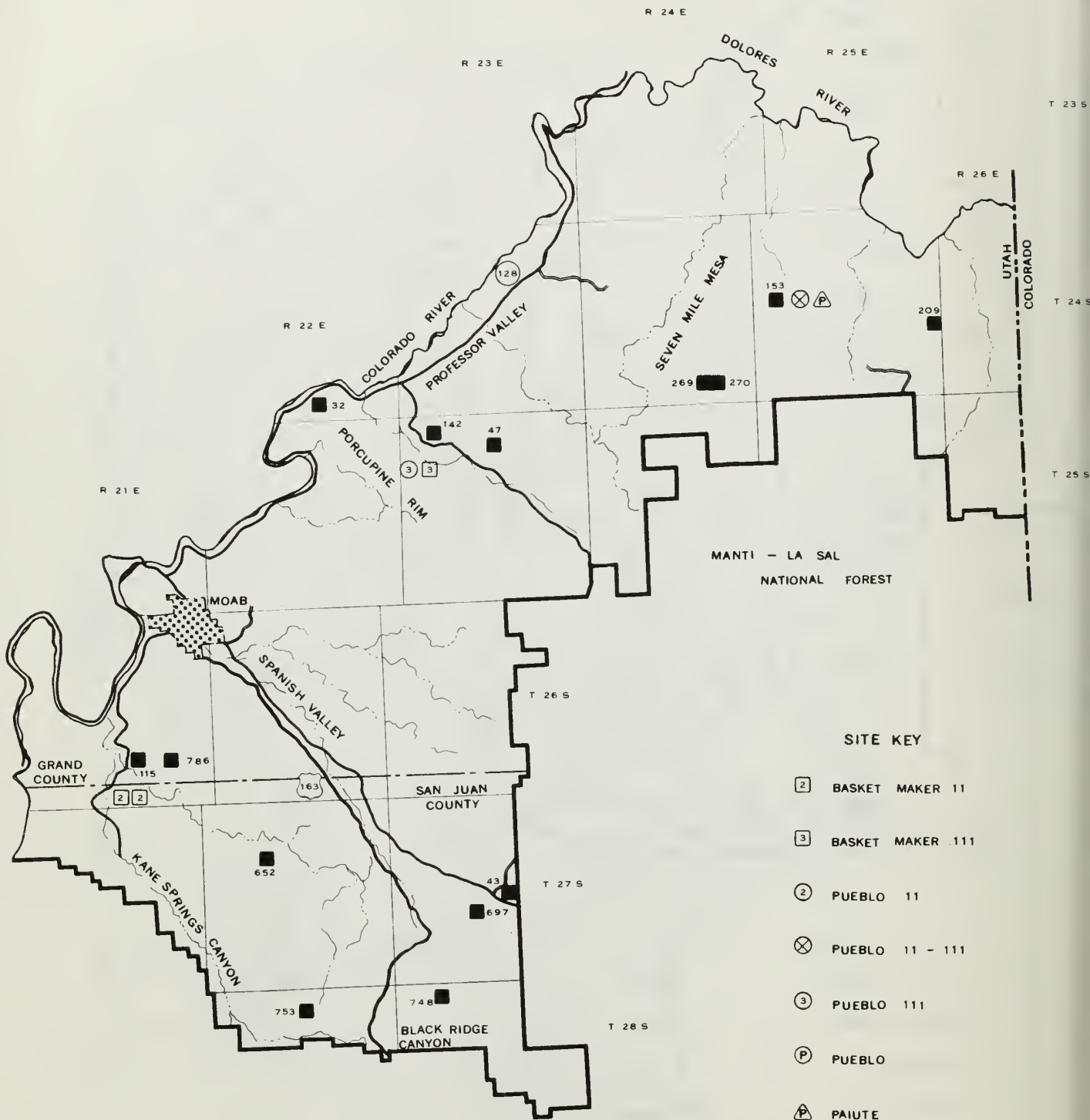
INDIAN CREEK PLANNING UNIT
 SITE DISTRIBUTION BY FUNCTION
 FIG. 3



DOLORS PLANNING UNIT SITE DISTRIBUTION BY FUNCTION
FIG 5



INDIAN CREEK PLANNING UNIT
 CULTURAL / TEMPORAL SITE DISTRIBUTION
 FIG. 7



CASTLE VALLEY PLANNING UNIT, CULTURAL/TEMPORAL SITE DISTRIBUTION

FIG. 8

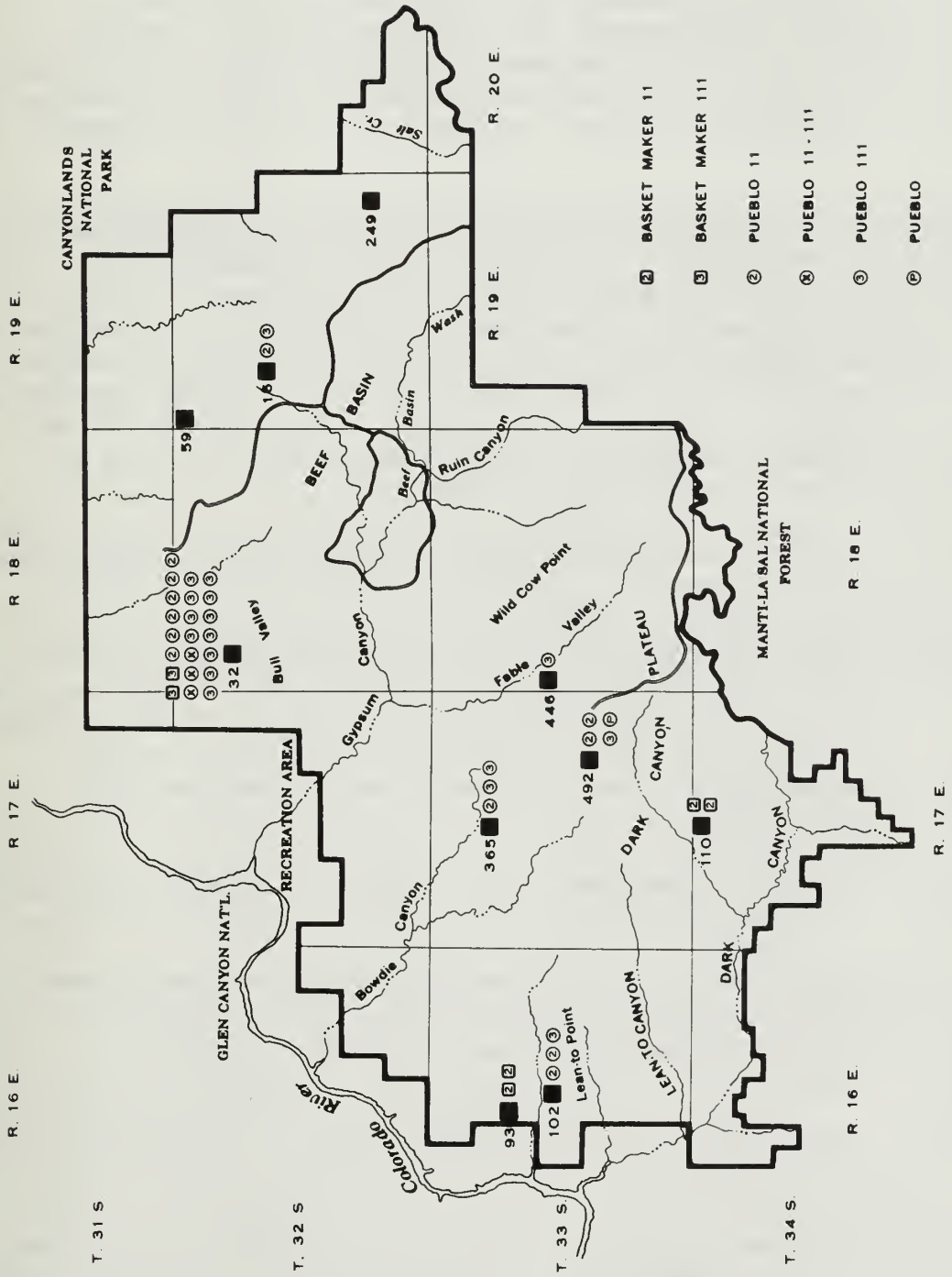


FIG. 9. BEEF BASIN PLANNING UNIT. CULTURAL / TEMPORAL SITE DISTRIBUTION.

The argument may be advanced that the lithic scatter is indicative of extended activity not manifest in the site itself. The hunting and gathering suggested by the chipping sites are time-consuming activities. While this is readily acknowledged, the same reasoning is applicable to the other sites as well. Even though the sedentary pattern may have rested more lightly upon the Anasazi than it has on many other peoples, the Anasazi were still sedentary and the sedentary concept is one which denotes a centering of life and its multifaceted activities, many of which are not manifest in the cultural debris, around a more or less permanent domicile.

The distribution of sites recorded during this survey conforms quite closely to patterns suggested by the literature surveyed earlier in this chapter. As a broad and general trend, the evidence of the most intense prehistoric activity is found in the Beef Basin planning unit. Although the Beef Basin unit encompasses only 15.9% of the project area, it produced 28% of the sites recorded. More significantly, 15 of the 19 habitation sites were found here while 14 of 17 storage sites were also included in the unit as were 19 of 30 camp sites. Finally, 39 of 52 sites, that is, 75% of all sites identified as Anasazi were located in this tract.

Moving northeast into the Indian Creek planning unit, the evidence of activity associated with habitation, storage, and camp sites diminishes markedly. Although three small habitation sites occur near the center of the unit, the eastern half of the area is clearly dominated by limited activity chipping sites. The northwest quarter of the planning unit, meanwhile, produces four of the six quadrants found to be totally lacking in sites. A total of 86% of the sites in the unit are chipping sites. These sites also represent 68% of all chipping sites recorded although the unit has only 50.8% of the project area.

Still further north in the Castle Valley planning unit, sites of all kinds continue to diminish sharply in number. With 22.2% of the project area, Castle Valley produced 12.8% of the sites. About 75% of these are chipping sites while only five camp sites were identified along with a single habitation site. Storage sites are entirely absent. The sites indicative of more intense and more general activity are, with the exception of a single camp site, found within three or four miles of the Colorado River.

Finally, in the Dolores planning unit in the extreme northeastern part of the project area, eight lithic scatters lacking diagnostic material of any kind represent the total cultural evidence for the entire unit. Five of the sites were found within a single sample unit while another quad produced two sites and a third produced but one. The remaining four quadrants yielded no sites.

The pattern of site distribution with its marked thinning of the evidence of human activity as one moves north and east from the Beef Basin region clearly indicates that this is a zone marking one of the boundaries of the San Juan Anasazi culture area as suggested by Lindsay (1976). At the same time, however, more detailed considerations of site distribution remain to be examined. Figs. 10 through 21 on the following pages present tabulations of site locations according to topography and vegetation. Each figure represents the data for sites of specific function and for cultural/temporal position. Narrative summaries of this data are given below.

Chipping Sites. Some 68% of all chipping sites recorded during the project were found in the Indian Creek planning unit (Fig. 10). Of this number, 89 sites, or 86% of the unit total, are located in the juniper-pinon zone while only 14 are in brushland. Favored locations within this framework are benches or terraces, ridges, and generally sloping ground. While a few are found on mesa tops and four occurred on talus slopes, none were located near the edge of cliffs nor at the base of ledges.

In the Castle Valley planning unit, 14 chipping sites reveal a two-to-one preference for juniper-pinon cover over brushlands, with ridges and broad, level areas being favored in forested zones. Ledges seem to have been avoided as were, in this case, talus slopes.

Six of eight chipping sites in the Dolores planning unit are in brushland where terraces and mesa tops were preferred. The two sites in forested areas and one in brushland are, however, located on old flood plains in canyon bottoms.

Sixty-one percent of the Beef Basin chipping sites are found in brushland with over 80% of these being located on terraces. Mesa tops were also used, especially in juniper-pinon areas. Cliff edges, the base of ledges, and talus slopes contain no sites and there are none in areas generally classed as sloping or level.

Camp Sites. In the Beef Basin planning unit, 19 camp sites are listed (Fig. 11). This number accounts for 63% of all camp sites found during the project and they represent 31% of the Beef Basin inventory. Thirteen of the 19 Beef Basin camps are in brushland with terraces, level and broken surfaces along with broad slopes the preferred areas. Mesa tops, cliff edges, the base of ledges, and talus slopes appear to have been avoided.

Five of the six camp sites found in the Indian Creek planning unit are in juniper-pinon forests with sloping or level areas preferred. Conversely, in the Castle Valley unit, four of the five camp sites occur in brushland. Here level areas and the base of ledges were selected camp situations.

	Indian Creek		Castle Valley		Dolores		Beef Basin		TOTAL	
	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush
Bench/Terrace	23	1	2			2	2	9	27	12
Level	4	6	3	1					7	7
Broken	3		2	4					5	4
Ridge	22	2	6			1	2		30	3
Slope	21	3	1						22	3
Cliff Edge		1								1
Mesa Top	11			2		2	3	1	14	5
Canyon Bottom	1	1			2	1		1	3	3
Ledge										
Talus	4								4	
TOTALS	89	14	14	7	2	6	7	11	12	38

Fig. 10. Chipping Sites: Distribution by Topography and Vegetation.

	Indian Creek		Castle Valley		Dolores		Beef Basin		TOTAL	
	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush
Bench/Terrace	1						2	4	3	4
Level	2			2			1	2	3	4
Broken							1	3	1	3
Ridge							1		1	
Slope	2	1	1					4	3	5
Cliff Edge										
Mesa Top										
Canyon Bottom								1		1
Ledge				2						2
Talus										
TOTALS	5	1	1	4			5	14	11	19

Fig. 11. Camp Sites: Distribution by Topography and Vegetation.

	Indian Creek		Castle Valley		Dolores		Beef Basin		TOTAL	
	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush
Bench/Terrace Level	1						1	2	2	2
Broken Ridge							4	4	4	4
Slope		1					2	2	2	1
Cliff Edge								1		1
Mesa Top										
Canyon Bottom	1								1	
Ledge								1		1
Talus			1							1
TOTALS	2	1	1				7	8	9	10

Fig. 12. Habitation Sites: Distribution by Topography and Vegetation.

	Indian Creek		Castle Valley		Dolores		Beef Basin		TOTAL	
	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush
Bench/Terrace Level								2		2
Broken Ridge	1						1		2	
Slope							1	1	1	1
Cliff Edge	1						2	1	2	1
Mesa Top	1								1	
Canyon Bottom								1		1
Ledge								1		1
Talus										
TOTALS	3						6	8	9	8

Fig. 13. Storage Sites: Distribution by Topography and Vegetation.

	Indian Creek		Castle Valley		Dolores		Beef Basin		TOTAL	
	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush
Bench/Terrace Level	1	1							1	1
Broken Ridge	1								1	
Slope										
Cliff Edge		2								2
Mesa Top										
Canyon Bottom										
Ledge	2			1					2	1
Talus										
TOTALS	4	3		1					4	4

Fig. 14. Rock Art Sites: Distribution by Topography and Vegetation.

	Indian Creek		Castle Valley		Dolores		Beef Basin		TOTAL	
	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush
Bench/Terrace Level	1								1	
Broken Ridge								2		2
Slope							2		2	
Cliff Edge		1								1
Mesa Top	1								1	
Canyon Bottom										
Ledge				2						2
Talus										
TOTALS	2	1		2			2	2	4	5

Fig. 15. Basket Maker II Sites: Distribution by Topography and Vegetation.

	Indian Creek		Castle Valley		Dolores		Beef Basin		TOTAL	
	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush
Bench/Terrace Level				1				1		1
Broken Ridge										
Slope							1		1	
Cliff Edge										
Mesa Top										
Canyon Bottom										
Ledge										
Talus										
TOTALS				1			1	1	1	2

Fig. 16. Basket Maker III Sites: Distribution by Topography and Vegetation.

	Indian Creek		Castle Valley		Dolores		Beef Basin		TOTAL	
	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush
Bench/Terrace Level	3						2	3	5	3
Broken Ridge								2		2
Slope								2		2
Cliff Edge								2		2
Mesa Top										
Canyon Bottom	1								1	
Ledge										
Talus										
TOTALS	4						2	10	6	10

Fig. 17. Pueblo II Sites: Distribution by Topography and Vegetation.

	Indian Creek		Castle Valley		Dolores		Beef Basin		TOTAL	
	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush
Bench/Terrace Level							1		1	
Broken Ridge			1					2		2
Slope										
Cliff Edge										
Mesa Top								1		1
Canyon Bottom										
Ledge										
Talus										
TOTALS			1				1	3	2	3

Fig. 18. Pueblo II-III Sites: Distribution by Topography and Vegetation.

	Indian Creek		Castle Valley		Dolores		Beef Basin		TOTAL	
	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush
Bench/Terrace Level								5		5
Broken Ridge	1						1	2	2	
Slope							3	2	3	2
Cliff Edge							2	1	2	1
Mesa Top										
Canyon Bottom										
Ledge								1		1
Talus										
TOTALS	1						6	11	7	11

Fig. 19. Pueblo III Sites: Distribution by Topography and Vegetation.

	Indian Creek		Castle Valley		Dolores		Beef Basin		TOTAL	
	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush
Bench/Terrace Level	5						3	9	8	9
Broken Ridge	1		1				2	4	4	4
Slope							2	2	2	2
Cliff Edge		1					4	4	4	4
Mesa Top	1						2	3	2	4
Canyon Bottom	1							1	1	1
Ledge				2				1		3
Talus										
TOTALS	9	1	1	3			13	26	23	30

Fig. 20. All Anasazi Sites: Distribution by Topography and Vegetation.

	Indian Creek		Castle Valley		Dolores		Beef Basin		TOTAL	
	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush	J-P	Brush
Bench/Terrace Level	26	2	2			2	5	17	33	21
Broken Ridge	6	6	3	3			1	2	10	11
Slope	5		2	4			7	3	14	7
Cliff Edge	22	2	6			1	4	5	32	8
Mesa Top	23	5	2				4	5	29	10
Canyon Bottom	1	3					2	3	3	6
Ledge	12			2		2	3	1	15	5
Talus	2	1			2	1		3	4	5
TOTALS	2			3				2	2	5
TOTALS	4			1					4	1
TOTALS	103	19	15	13	2	6	26	41	146	79

Fig. 21. All Sites: Distribution by Topography and Vegetation.

Habitation Sites. Just under 79% of the 19 habitation sites identified are located in the Beef Basin unit while 3 are found near the center of the Indian Creek planning unit and one was found in the Castle Valley planning unit (Fig. 12). Of the 15 Beef Basin sites, 8 are in brushlands where ridges proved to be the preferred terrain but with habitation units also found on terraces, cliff edges, and at the base of a ledge. Dwellings in forested regions favored broken ground but they were also found on broad slopes and one is situated on a terrace. Two of the Indian Creek habitation sites are in forested areas. One of these is on a terrace and the other is in a canyon bottom. The brushland habitation is on a broad slope.

Storage Sites. Only 3 of 17 storage sites are found in the Indian Creek unit (Fig. 13). All are in juniper-pinon regions with one on broken ground, one on a cliff edge, and one on a mesa top. The remaining 14 storage sites occur in the Beef Basin planning unit where 8 are in brush-covered areas. The preferred locations are terraces and cliff edges while level and broken ground, mesa tops and talus slopes were avoided. The storage structures in forested areas favored slopes and cliff edges with terraces, level ground, mesa tops, canyon bottoms, ledges, and talus slopes being avoided.

Rock Art Sites. A total of 7 of the 8 rock art sites found during the survey are located in the Indian Creek unit where 4 are in forested zones and 3 occur in brush-covered regions (Fig. 14). Two of the sites in the forest are at the base of ledges while one is on a terrace and the other on broken ground. One of the brushland sites is on a terrace and the other two are at the edge of cliffs. A single petroglyph found in the Castle Valley unit is at the base of a ledge in a brush-covered area.

Basket Maker II Sites. Three of the 9 Basket Maker II sites recorded will be found in the Indian Creek unit (Fig. 15). Of the 2 situated in wooded areas, one is on a terrace and the other occurs on a mesa top. The cliff edge site is in a brush-covered zone. Both of the Basket Maker II sites in the Castle Valley planning unit are at the base of a ledge in brushland areas. Two Basket Maker II sites are on forested ridges in the Beef Basin unit while, in the same area, two are also found in brush-covered broken ground.

Basket Maker III Sites. Only 3 sites in this category are recorded (Fig. 16). In the Castle Valley area, one was found on level brushland. The remaining 2, found in the Beef Basin unit, include one situated on a forested slope and one on a brush-covered terrace.

Pueblo II Sites. Just one quarter of the 16 Pueblo II sites identified are in the forested areas of the Indian Creek planning unit where three are found on terraces and one occurs in the bottom of a canyon (Fig. 17). The remaining 12 Pueblo II sites are all located in the Beef Basin unit. Except for two sites on forested terraces, all are in brush-covered areas. Three of the brushland sites are on terraces but these sites also occur on level, broken, and sloping ground as well as at the edge of cliffs.

Pueblo II-III Sites. A single site, representing the Pueblo II-III transition, is found in forest-covered broken ground in the Castle Valley planning unit (Fig. 18). This site is, perhaps, indicative of the latest point in time during which the San Juan Anasazi pushed this far north (See Lindsay, 1976). Four additional examples of these transitional sites are in the Beef Basin planning unit where one is situated on a forested bench, two are located on a brush-covered ridge, and one is on mesa top brushland.

Pueblo III Sites. Only one of the 18 Pueblo III sites is located outside the Beef Basin planning unit (Fig. 19). This lone exception is in broken terrain covered with juniper and pinon in the Indian Creek unit. Eleven of the 17 Beef Basin Pueblo III sites are in the brush zone where the favored ground is the terraced areas. Level and sloping surfaces also contain brushland sites while one is at the edge of a cliff and another at the base of a ledge. Sites in the juniper-pinon areas favor sloping ground while two are located on a cliff edge and one is on broken ground.

All Anasazi Sites. A total of 53 sites produced diagnostic materials that justified assigning them to an Anasazi cultural affiliation (Fig. 20). Of this number, 39 are located in the Beef Basin planning unit, 10 occur in the Indian Creek unit, and four are in the Castle Valley planning unit. The Dolores planning unit must, thus far, be seen as outside the range of Anasazi activity.

An interesting contrast in site locations is seen in a comparison of the Indian Creek and the Beef Basin planning units. Of the 10 sites in the Indian Creek area, 9 occur in forested areas with but one in brushland. In Beef Basin, on the other hand, 26 out of 39 sites, or 66% of the total Anasazi site count, are in brush-covered areas. The Castle Valley unit contains only four Anasazi sites. Three of these are in brushlands. To the extent that a trend can be seen, the Castle Valley sites appear to follow the Beef Basin pattern.

Within this framework of vegetative distribution, the terraces areas proved to be the most popular terrain followed by broken and by sloping ground. Cliff edge locales were next in popularity followed by level areas

and ridge tops. Talus slopes were avoided entirely and only a single Anasazi site occurred in a canyon bottom.

All Sites. A summary of all recorded sites in terms of their relations to vegetation and topography is almost equivalent to a synthesis of data on Anasazi and chipping site locations (Fig. 21). The totals show that 146 out of 225 sites in all types (64%) are found in forested areas. This shift from the Anasazi site preference for brushland areas reflects the greater site total in the Indian Creek unit where 103 of 122 sites, or just over 80% of all sites, most of them chipping sites, are in forested areas. A slight tendency to favor juniper-pinon regions over those in brush is evident in the Castle Valley unit while 6 of the 8 Dolores planning unit sites are in brush-covered areas. In Beef Basin, however, the brushland preference is maintained in the total site count as 41 out of 67 sites are found in this zone.

Out of a total of 225 sites benches or terraced areas provide the setting for 54 sites while ridge tops and sloping surfaces are the next most commonly used areas (Fig. 21). Twenty-two of the sites are located on level surfaces while nearly equal numbers of sites occur in broken terrain and on mesa tops. Talus slopes are the least used areas while only a slightly larger number of sites are found at the base of ledges, in canyon bottoms, and at the edge of cliffs.

An attempt has also been made to assess the role of elevation as a variable in site selection. For the most part the grouping of sites by 100 meter intervals of elevation has failed to produce any patterns in site distribution. A single instance of apparent elevational influence has been found, however, in the relation between chipping site area and altitude. The results of this are graphed below (Fig. 22).

Column A stands for sites with an area in excess of 10,000 square meters. Column B records the elevations of sites ranging in size from 1,000 to 9,999 square meters. Elevations for sites of between 100 and 999 square meters are recorded in Column C and sites ranging from 10 to 99 square meters are posted in Column D. Finally, sites with an area of 9 square meters or less are represented by their elevations in Column E.

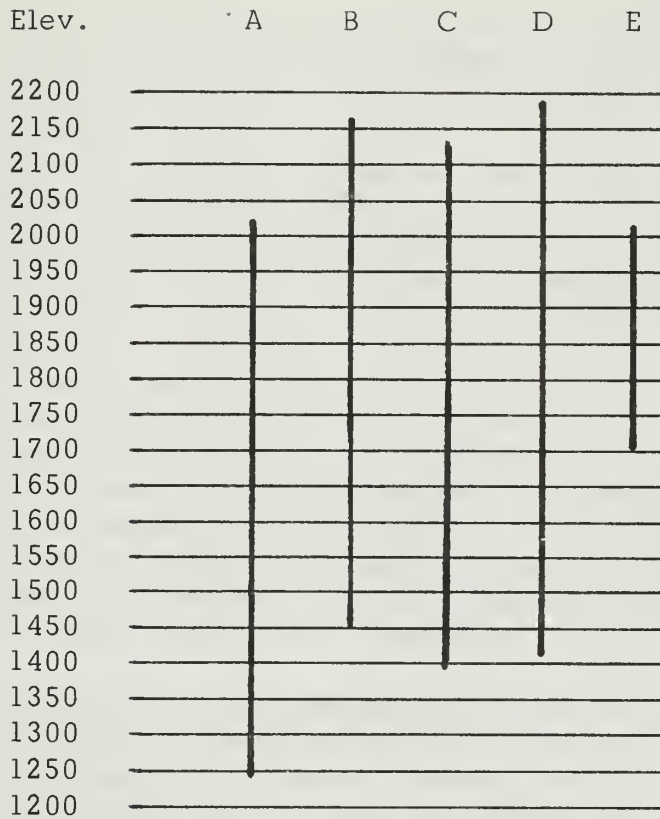


Figure 22.

There is nothing very striking about the results as a whole. The largest sites, of which there are 19, show an elevational range of 780 meters. The 30 sites in the 1,000 to 9,999 square meter category vary in elevation to the extent of 734 meters. The third group, which includes 54 sites between 100 and 999 square meters, ranges in elevation over 755 meters while 31 sites in the 10 to 99 square meter bracket have an elevational range of 791 meters.

The pattern thus far suggests nothing more than the general elevational range found within the project area. In the example of the 11 sites covering less than 10 square meters, however, the elevational range is suddenly restricted to 301 meters. This is less than half the range of chipping sites in all other size categories. Even though persisting hunting and gathering patterns repeated over a period of many years would account for the more numerous large lithic scatters as compared with the more limited number of very small sites which probably indicate one time use, there seems to be no means of accounting for the restricted elevational distribution of the smaller sites.

This chapter opened with a review of earlier work which shows that the findings for certain areas suggest that the project area and the lands adjacent to it would cover the northern edge of the area of Mesa Verdean activity. It was argued that this region would blend, not into the Fremont area, but into an area almost devoid of evidence sustained or permanent prehistoric activity. The findings of this study are in accord with these predictions. It remains necessary, however, to suggest some of the reasons why the known sites are distributed in the patterns observed.

The assumption that Anasazi territorial expansion came largely as the result of population pressure is based, at least implicitly, on the belief that human beings are generally conservative in nature. This is to say that, while abrupt cultural changes which cannot be explained in terms of environmental imperatives do occur, most people remain substantially committed to perpetuating familiar life styles. Significant changes in adaptive strategies, including territorial distribution, generally occur only in response to changes in the material conditions of life.

On the basis of these assumptions, then, it may be argued that the expansion of the Anasazi cultural pattern into this general area resulted from one of two factors or from a possible combination of both of them. The expansion of the culture may have been an in situ adoption of Anasazi patterns by resident Archaic peoples who found that, within the framework of their existing technology, the carrying capacity of their land was being over-taxed. Thus a change to the Anasazi adaptive strategy with its increased reliance upon cultigens must have promised a more productive use of the environment.

It is also possible, of course, that the Anasazi penetration involved an actual movement of people leaving other areas where the success of the horticultural pattern was creating problems of overpopulation. Overpopulation may have resulted either from an actual increase in the number of people or it may have been the result of a declining productivity of some lands already in use which resulted in a deterioration of the land/population ratio. Whatever may have been the case, the expansion of the Mesa Verde culture pattern into the general area is clearly established.

If the material conditions of life are presumed to have been the motivating forces behind an expansion of the culture area, it should follow that the limits of that expansion were similarly determined by the absence of similar compulsions at a given point in time. The greatly diminished incidence of sites in the northern portions of the area in question, even though suitable site localities exist, argues a simple lack of need for more

territory. Certainly the region nearly devoid of sites militates against an argument that the Mesa Verde northward thrust was blunted by the Fremont occupation.

This interpretation is supported further by the fact that the latest sites in the northernmost parts of the project area are no later than the Pueblo II-III transition which took place around 1100 A. D. This seems to argue that the northward Anasazi expansion ended because there was no need for additional land. The end of territorial expansion was thus much earlier than, and unrelated to, the conditions which prompted the general contraction of Anasazi occupations some time after 1250 A. D.

As for the sites actually known from the work of this project, it would appear that site distribution is related to the nature of available supplies of culinary water. This relationship is one of areal proximity rather than one of the immediate location of each habitation site near a water source. Water for horticulture is not the issue in-as-much as various forms of rainfall farming are possible throughout the project area.

The general drainage pattern of the San Juan Triangle, as defined earlier, is to the south and also to the north and to the west. The project sample included none of the south-flowing drainages and thus the focus must be on the drainages to the north and to the west. The portions of the project area which are dominated by chipping sites indicative of hunting and gathering activities are substantially the areas drained by the upper reaches of the major wash systems. The water accumulated in these upper collecting systems would come from two sources. One would be the spring runoff from melting snows. This would afford a more sustained, although still seasonal, flow than the water available during the heavy showers characteristic of the late summer months when heavy flows generally last only for a few hours at a time. It is true, of course, that the warm season rains would make some standing water available for short periods of time during which the resource could be used.

The fact remains that, between the relatively brief periods of abundant water, much of the region would remain too dry to support permanent habitation and other sustained year round activity. Thus much of this area would be used primarily for hunting and gathering and the exploitation of its resources would be limited to the wet seasons of good water or to the amount of water that could be carried into the area.

In this connection it should be noted that the failure of settlements or other sites indicative of long-term activity to cluster along the perennial flow of the Dolores River can be explained by two factors. First, of course, is the possibility that population pressures from the Anasazi to the south or

from the Fremont to the north were insufficient to cause any group to penetrate the region for periods of time sufficient to permit exploitation of the river's potential on any sustained basis. There is the further fact that Toll's (1977) report indicates that very little area suitable for sedentary life is to be found along the greater part of the river's course.

The greater density of Anasazi sites in the Beef Basin planning unit appears to be the result of more reliable water resources than of any other factor. Site sheet reports show that, in general, the sites in this unit are located somewhat further from potential water sources than were those in other areas. At the same time, however, the Beef Basin unit is astride the middle and lower reaches of the drainages flowing towards the Colorado River. Serviced by much larger collecting systems, the canyons of this area might tend to contain live water for longer periods of time. It appears likely, however, that the primary source of culinary water in the Beef Basin area is the Cedar Mesa sandstone which floors most of the unit. The value of the runoff from areas to the east is most likely to be seen in the water fed into the aquifers that feed the springs in the Beef Basin region. While the greater number of the springs in this area tend to be in the deeper portions of the canyons, evidence noted in the Grand Canyon (Euler, personal communication, 1974) and from the Chippean Ridge area (Louthan, 1977) argues that prehistoric occupants of this region were not intimidated by the need to make steep canyon descents to secure culinary water.

CHAPTER V. PROJECTIONS OF SITE DENSITIES AND CULTURAL RESOURCE SENSITIVITY IN THE STUDY AREA.

The projection of archeological site densities on the basis of a 1% sample requires only that any figure derived from that sample be multiplied by 100. On this basis, for example, the 121 sites recorded in the Indian Creek planning unit can be used to project that an intensive survey of the entire unit would produce a total of 12,100 sites. Further, since the sample included 10 sites of Anasazi affiliation, there is a good level of probability that 1,000 of the sites in the planning unit will produce survey evidence diagnostic of an Anasazi cultural affiliation.

In order to establish more refined projections for site densities in the three vegetation zones recorded during the survey, the acreage estimates made by the field crews have been used rather than those given in the BLM sample unit classifications because the former more accurately reflect the distribution of forested and brushland cover in the quads. The wasteland areas need not be taken into account since no sites were found in lands falling within this classification.

A summary of the acreage encompassed by each zone is given for all quadrants of each planning unit in Figs. 23, 24, 25, and 26. Site counts are included for each ecozone within every sample unit and site totals for each quad are also given. A minor error in acreage calculations is likely as the result of errors made in the cadastral survey which resulted in the delineation of a few sections with either more or less than 640 acres.

Using the ecozone acreages compiled for each planning unit and by incorporating site counts by function and by cultural/temporal position as given in Figs. 2a and 2b, it becomes possible to project the frequency of sites in any area within the planning unit in terms of a ratio of ecozone acreage to sites. Thus, for example, by dividing the 101 chipping sites that have been recorded into the 2194 acres of juniper and pinon in the Indian Creek planning unit sample, it can be argued that additional surveys of Indian Creek juniper-pinon areas should find one chipping site for every 21 acres examined. This type of data is brought together in Fig. 27 where similar projections are made for sites on the basis of their functions and according to their cultural/temporal positions.

The bottom line of calculations in Fig. 27 represents the projected frequency of all sites, irrespective of kind. In order to avoid counting sites more than once, the site counts have been derived from Fig. 21 on page 143.

Quad	Juniper-Pinon		Brushland		Wasteland		TOTAL SITES	Total in J-P	Total in Brush
	%	Acres	%	Acres	%	Acres			
11			65%	104	35%	56			
30	40%	64	54%	86	6%	10	1		1
33			32%	51	68%	109	1		1
37	80%	128			20%	32	2	2	
42			100%	160					
43			82%	131	18%	29	5	5	
53	60%	96	5%	8	35%	56	1	1	
72			100%	160			5		5
88	90%	144	10%	16			11	11	
120	75%	120	25%	40			14	14	
128	100%	160							
185	35%	56	60%	96	5%	8	5	2	3
208			10%	16	90%	144			
216	58%	93	30%	48	12%	19	7	2	5
232	45%	72	15%	24	40%	64	1	1	
241	70%	112	20%	32	10%	16			
242	33%	53	30%	48	37%	59			
303	93%	149			7%	11			
307	7%	11	93%	149			1		1
314	2%	3	94%	150	4%	7	1	1	
374	85%	136	3%	5	12%	19	1	1	
399	50%	80			50%	80	6	6	
426			80%	128	20%	32	9	2	7
580			100%	160					
593	90%	144			10%	16	8	8	
663	7%	13	60%	94	33%	53	4	4	
692	100%	160					2	2	
713	100%	160					10	10	
752			10%	16	90%	144	1		1
772			100%	160			1		1
806	75%	120	25%	40			1		1
1001	75%	120	25%	40			14	13	1
TOTALS	42%	2194	38%	1962	20%	964	121	101	10

Fig. 23. Indian Creek Planning Unit. Ecozone and Site Distribution

Quad	Juniper-Pinon		Brushland		Wasteland		TOTAL SITES	Total in J-P	Total in Brush
	%	Acres	%	Acres	%	Acres			
32	30%	48			70%	112			
43	25%	40	40%	64	35%	56	5	5	
47			6%	10	94%	150			
115			30%	48	70%	112	4	4	
142			33%	53	67%	107	3	3	
153	80%	128			20%	32	5	5	
209	92%	147			8%	13			
269	25%	40	15%	24	60%	96			
270	10%	16	35%	56	55%	88			
652	30%	48	40%	64	30%	48	1	1	
697	65%	104	30%	48	5%	8	1	1	
748	78%	125	22%	35			5	4	
753			75%	120	25%	40	3	3	
786	73%	117			27%	43	1	1	
TOTALS	36%	813	24%	522	40%	897	28	15	13

Fig. 24. Castle Valley Planning Unit. Ecozone and Site Distribution

Quad	Juniper-Pinon		Brushland		Wasteland		TOTAL Sites	Total in J-P	Total in Brush
	%	Acres	%	Acres	%	Acres			
3			100%	160			1	1	
5	2%	3	98%	157					
12	24%	38			78%	122			
105	85%	136			15%	24			
163			100%	160			5	5	
177	91%	146	9%	14			2	2	
232			82%	131	18%	29			
TOTALS	28%	323	56%	622	16%	175	8	2	6

Fig. 25. Dolores Planning Unit. Ecozone and Site Distribution.

Quad	Juniper-Pinon		Brushland		Wasteland		TOTAL SITES	Total in J-P	Total in Brush
	%	Acres	%	Acres	%	Acres			
16	6%	10	94%	150			2	2	
32	10%	16	90%	144			22	2	
59	30%	48			70%	112	1	1	
93	42%	67	32%	51	25%	42	8	8	
102	10%	16	35%	56	55%	88	9	9	
110	72%	115			28%	45	3	3	
249	98%	157	2%	3					
365	80%	128			20%	32	5	5	
446	60%	96			40%	64	4	4	
492	50%	80	35%	56	15%	25	7	7	
TOTALS	46%	733	28%	460	26%	407	61	24	37

Fig. 26. Beef Basin Planning Unit. Ecozone and Site Distribution.

	INDIAN CREEK			CASTLE VALLEY			DOLORES			BEEF BASIN		
	Acres		Brush	Acres		Brush	Acres		Brush	Acres		Brush
	J-P			J-P			J-P			J-P		
1 Chipping site per	21	140	58	75	162	104	105	42				
1 Camp site per	438	1962	163	522			147	39				
1 Ceramic site per	549	1962		522			56	23				
1 Habitation site per	1097	1962		522			105	57				
1 Storage site per	731						122	57				
1 Rockshelter site per	731			104			105	46				
1 Rock Art site per	439	981		522								
1 Basket Maker II site per	1097	1692		261			366	230				
1 Basket Maker III site per				261			733	640				
1 Pueblo II site per	549						366	230				
1 Pueblo II-III site per			813				733	153				
1 Pueblo III site per	244						122	41				
1 Anasazi site per	244	1692	813	714			56	18				
1 Site per	22	98	54	40	162	104	31	12				

Fig. 27. Site-Space Ratios by Ecozone and Planning Units.

The projection of site densities can be carried a bit further to indicate that, on any tract of land where the ratio of the vegetation zones is the same as that in the sample, one site of undetermined type can be found in a given number of acres. Thus, for example, the 121 sites reported as the total for the Indian Creek planning unit produces one site for every 34 acres of land examined. This means that, in any future survey where the ratio of juniper-pinon, brushland, and wasteland is substantially the same as that in the sample, the discovery of a site for each 34 acres of land would produce a density of 19 sites per square mile.

Within this framework of a presumed equivalent ratio of the vegetation zones, the Castle Valley rate of a site for every 48 acres leads to a calculated planning unit density of 13 sites per square mile. In the Dolores planning unit a rate of one site for every 188 acres prompts a prediction of only 5 sites per square mile. In the Beef Basin portion of the project area, the anticipated rate of a site for every 20 acres of land projects 32 sites per square mile.

While any site count constitutes base line data for estimates of the cultural resource sensitivity of an area, site density alone is not a measure of that sensitivity. The distinction is an important one which revolves around the issues of "significance" and of "redundancy". The significance of any site is, of course, determined by the nature of the information being sought in a specific research objective. Thus, within the framework of one research design, a site may produce little data and thus be regarded as having minimal significance. In another situation, where research has a different objective, the site may promise a substantial contribution and thus be viewed as very significant.

It is clear that no "final" assessment of the significance of any site can be made since developments within the archeological discipline have changed and will continue to change at a rapid rate. It may thus happen that a site lacking significance in terms of research capabilities at one point in time may assume much greater importance with the development of some new and unanticipated refinement in research techniques. The significance of any site, then, is potentially greater in the future than it may appear to be at the moment it is assessed. In spite of this, however, it is possible to predict that certain kinds of sites promise to produce more information than others, even in the future. This is to say that, for most purposes, the relative data value of certain sites will remain greater than the value of others even with striking new developments in research designs and methodologies.

A case in point is suggested by a hypothetical Mesa Verdean site which sheltered three or four families for a period of perhaps 50 years. Such a site would be more significant than a small lithic scatter, lacking cultural or temporal diagnostics and representing a single point in time when some unknown prehistoric transient paused to work a few pieces of stone. There is no question but what some information can be obtained from the lithic site and it is quite likely that the information derived will be increased with future developments. At the same time, however, the lithic scatter represents a limited activity representing only a small part of the total behavior pattern of the person or persons who stopped there. The Puebloan habitation site, on the other hand, offers the material residue of a wide range of activities conducted by persons of known cultural affiliation, representing a lengthy occupation that doubtless included individuals of both sexes and of a wide range in ages. It should be clear, then, that the habitation site is more significant in terms of the data that it may yield and, future developments in the discipline notwithstanding, its significance will remain greater than that of the lithic scatter.

It is also necessary to take into account the issue of "redundancy". The significance of a site is not altered by the frequency of the occurrence of sites of the same type. It is true, however, that in cases where sites of a particular type are abundant, the loss of a small percentage of the total within the type is of somewhat less cause for concern than would be the loss of sites that are much fewer in number.

With the above considerations in mind, the archeological sensitivity of any area can be calculated in terms of the potential loss of information concerning prehistoric (and, in some cases, historic) behavior if the sites are damaged or destroyed in the process of earth-disturbing activities or by the proximity of activities which may introduce an increased number of persons to an area. In somewhat subjective terms, areas can be classified as having a high, medium, or low archeological sensitivity. This means that, in the judgement of the analyst, areas of high archeological sensitivity are ones in which cultural resources promise to yield substantial bodies of information which will be lost as the result of certain kinds of activity. In such instances the mitigating measures, either avoidance or excavation, are urgently needed.

In areas designated as having medium archeological sensitivity, it is felt that a significant loss will occur as the result of some kinds of activity but the loss is not as great as in the case of the sites in regions of high sensitivity. The reduced loss exists either because the sites promise less information or because there are large numbers of limited activity sites and the loss of a small percentage of these would not substantially reduce

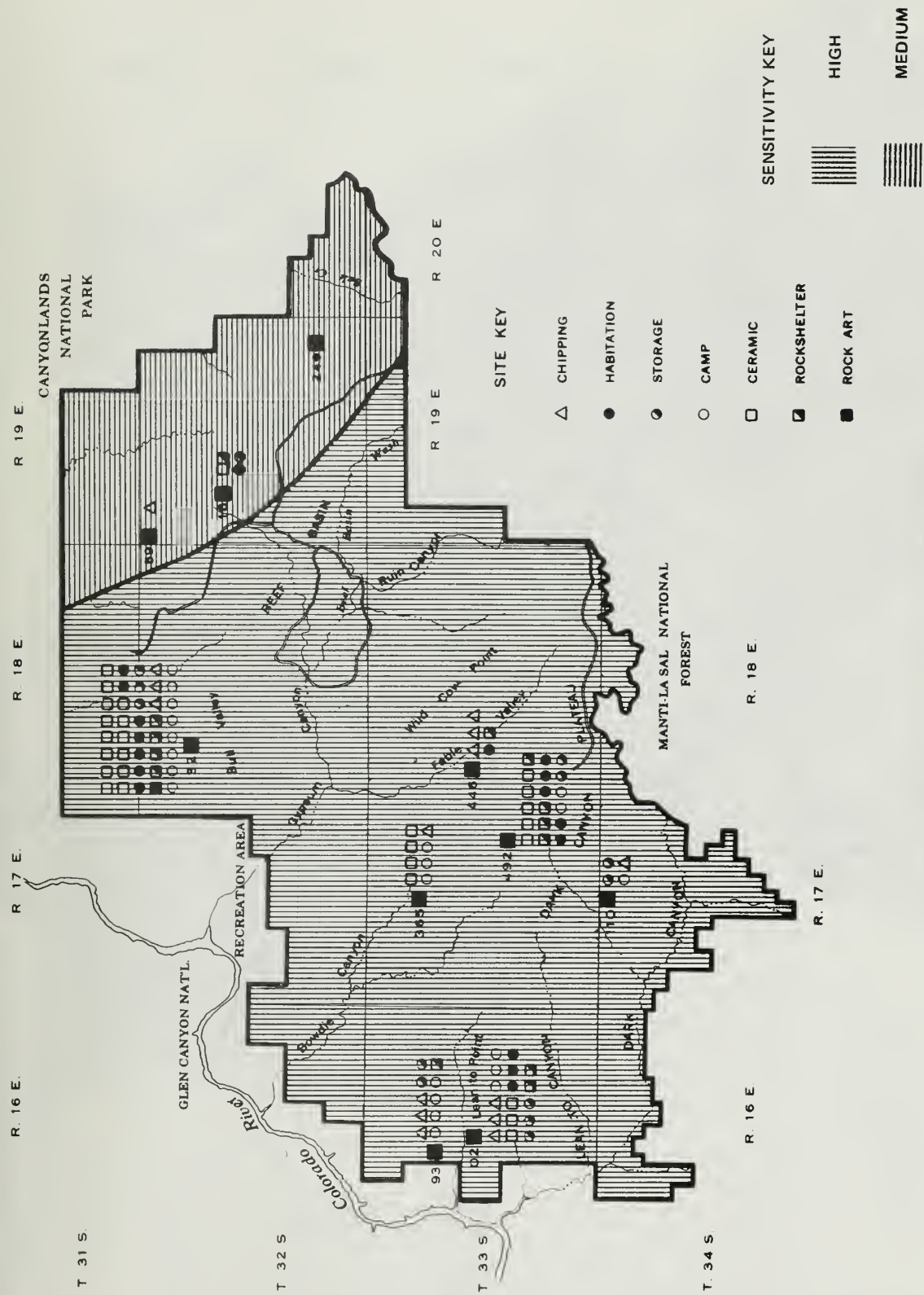


FIG. 28 BEEF BASIN: CULTURAL RESOURCE SENSITIVITY PROJECTION

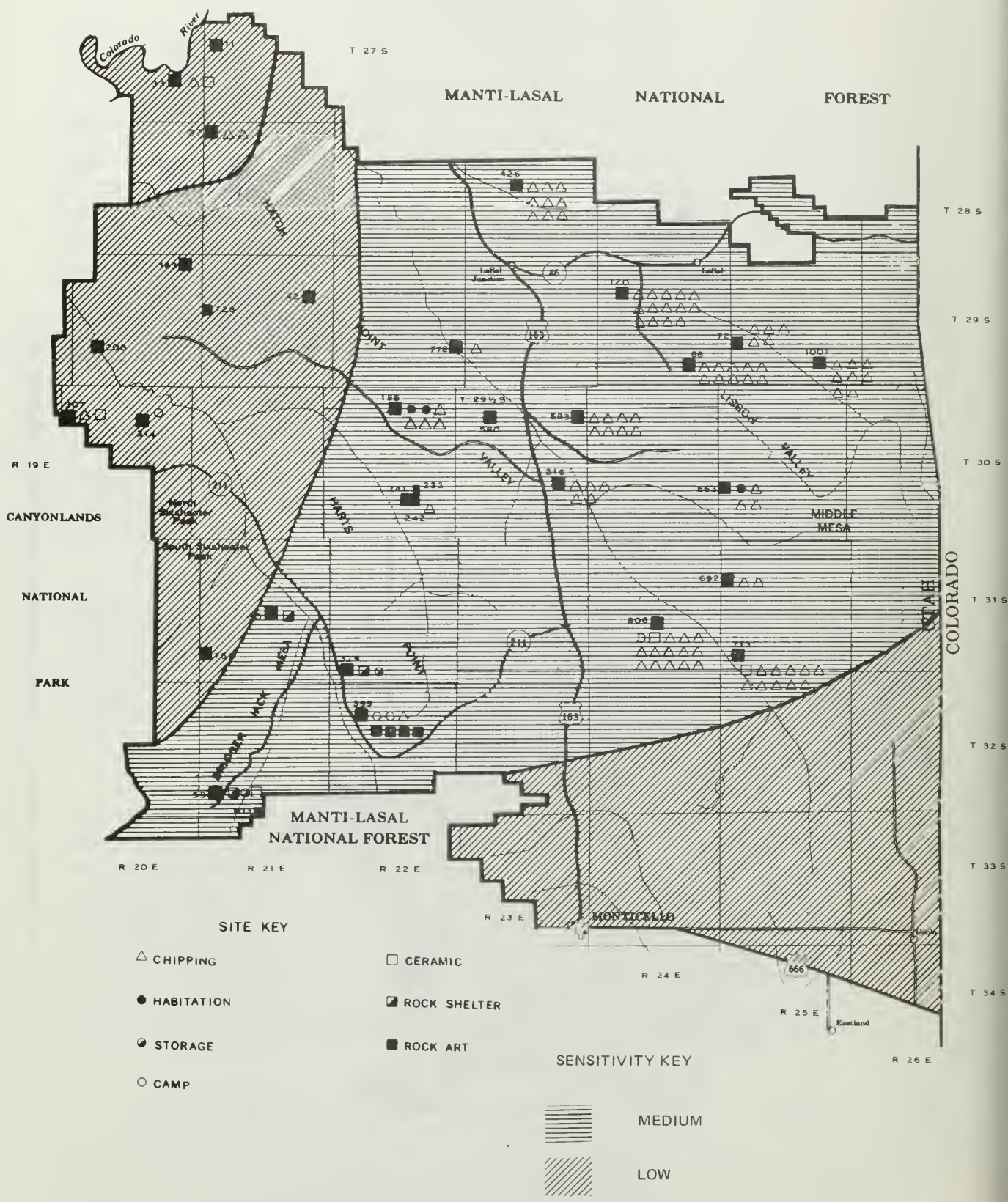


FIG. 29 INDIAN CREEK: CULTURAL RESOURCE SENSITIVITY PROJECTION.

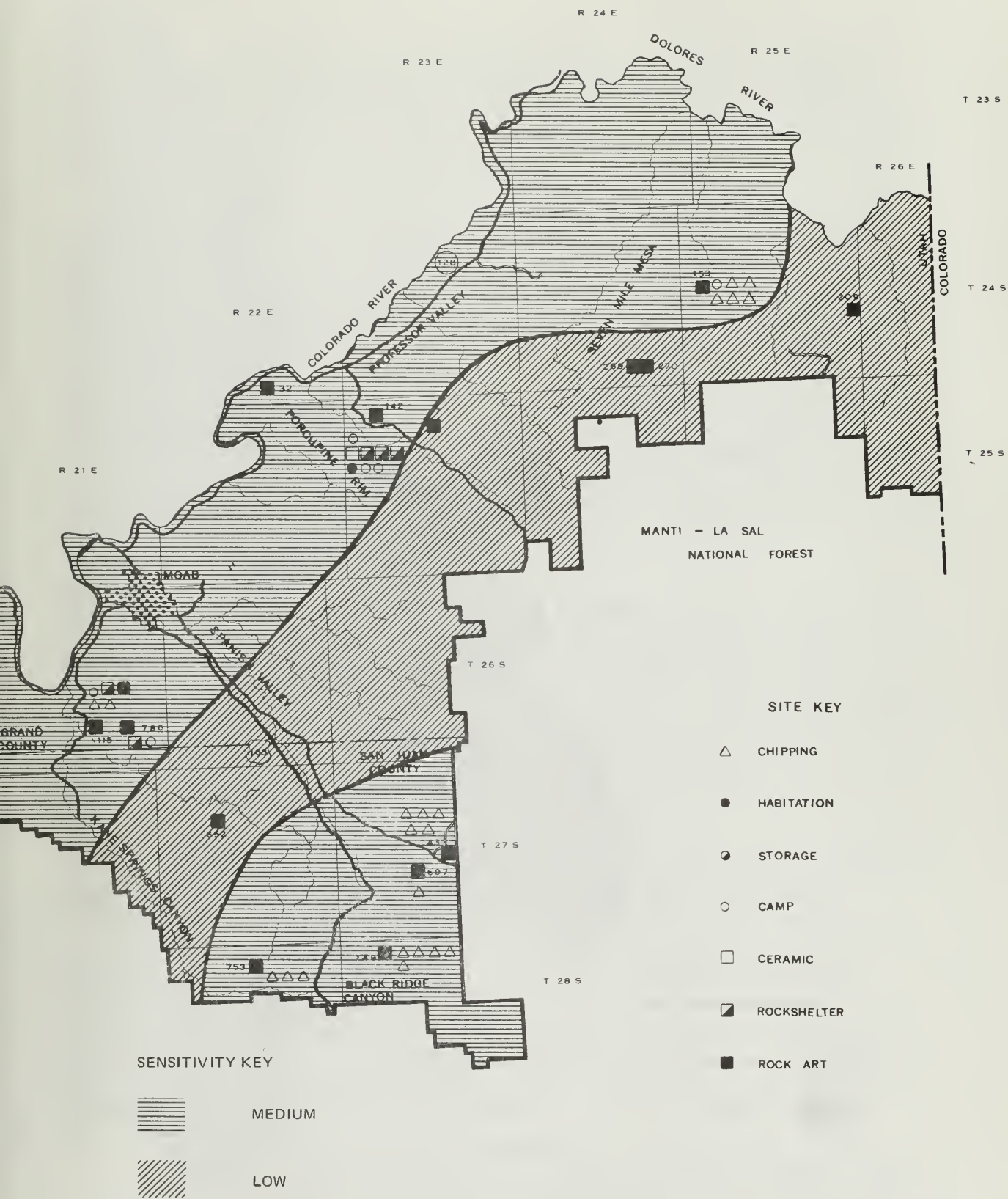


FIG. 30 CASTLE VALLEY: CULTURAL RESOURCE SENSITIVITY PROJECTION.

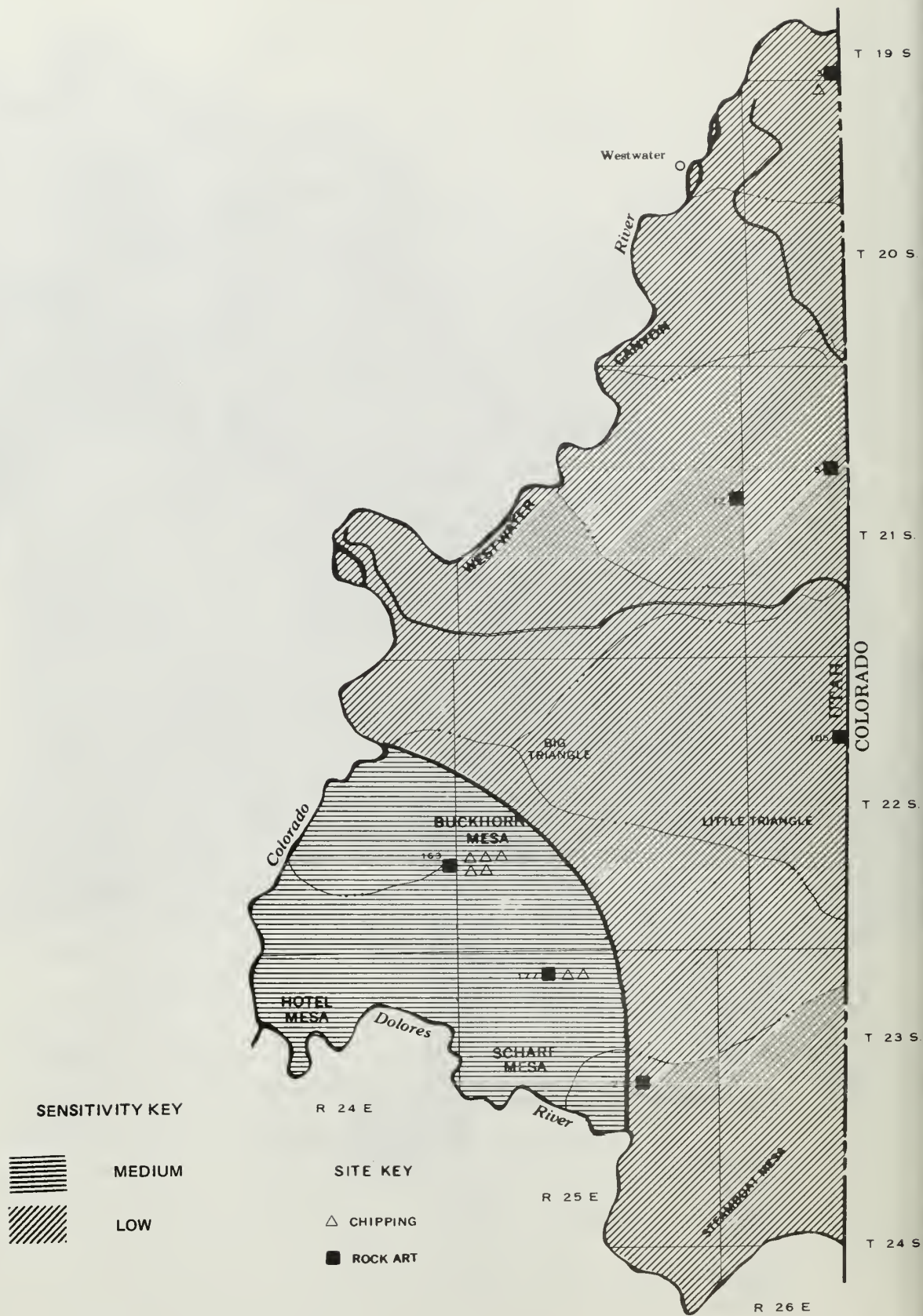


FIG. 31 DOLORES: CULTURAL RESOURCE SENSITIVITY PROJECTION.

the data base. This is not to say that these sites should not be protected by avoidance or that they should not be studied for whatever information they may yield when destruction cannot be avoided, but in the allocation of limited time and funds, these sites would have a somewhat lower priority where mitigating measures are required.

Areas of low cultural resource sensitivity are perhaps the most difficult to characterize. For purposes of this paper it can be said that low levels of sensitivity are suggested under conditions where site density appears to be low and where the sites that do exist tend to be limited activity sites which are all very similar. The sensitivity maps prepared for this report include some areas for which data is actually lacking. Given the nature of the sampling process, however, it seems preferable to omit a category for "unknown" since, carried to its logical extreme, that category would apply to everything except the actual sample quads. Obviously a larger sample size would make it possible to draw maps suggesting differing areas of archeological sensitivity in much greater detail. At the same time, however, it is here suggested that the data collected to this point will support the general outline of cultural resource sensitivity plotted in Figs. 28, 29, 30, and 31.

The greater portion of the Beef Basin planning unit is thought to have a high cultural resource sensitivity (Fig. 28). The evaluation is based upon the sites recorded in the sample as well as those reported in the literature. These sites are not only numerous, they reveal a high percentage of structural and/or ceramic sites indicative of multiple activities. At the northeastern end of the unit the sensitivity is believed to fall to the medium range. The number of sites in this region appears to be less and the range of activities manifest in the sites that do occur tends to be more restricted.

The area of medium archeological sensitivity extends from the eastern edge of the Beef Basin unit into the Indian Creek planning unit in a rough triangle which expands towards the northeast (Fig. 29). This zone of medium sensitivity is dominated by a profusion of lithic sites. From the perspective of this project, the southeastern portion of the unit is listed as having a low level of sensitivity when, in fact, it remains substantially unknown. A tract more legitimately labeled low sensitivity extends along the western edge of the planning unit with a slight tendency to widen as it extends to the north where it eventually encounters another area of medium sensitivity in the extreme northwestern corner of the unit along the smaller drainages flowing into the Colorado River.

In the Castle Valley planning unit (Fig. 30) an area of medium archeological sensitivity extends roughly along the east bank of the Colorado until it merges with a similar area extending south along the lower reaches of the

Dolores River. At the southern end of the Castle Valley unit there is also a zone of medium sensitivity which merges into the area of lithic scatters in the Indian Creek unit. The balance of the Castle Valley area is one of low sensitivity extending from the southwest towards the northeast. This area is bounded on the east by the Manti-LaSal National Forest, a region where it is believed that the cultural resource sensitivity probably increases to medium levels.

In the southwestern portion of the Dolores planning unit (Fig 31) is a tract of land bounded on the south by the Dolores River and on the west by the Colorado River which is rated as having a medium sensitivity. The balance of this unit is rated as having a low sensitivity. Reports of additional sites, apparently non-diagnostic lithic scatters, known to have been recorded in the unit might alter the assessment to some extent but the reports are not available and there is thus no hard data upon which to base a modification of present classifications.

CHAPTER VI. CONCLUSIONS

For archeologists who believe that there is much in the discipline that properly lies within the realm of the humanities, the application of quantitative methods must always remain suspect. This is doubtless a healthy dissent which may serve to remind the quantifiers and the statisticians that it is a "human" record that is being studied and not merely the patterns and traces of numbers and symbols. The fact remains, of course, that accumulation of data in significant amount provides the only adequate basis from which many trends may be discerned. This has been evident even within the confines of the present modest project.

The projected density of 32 sites per square mile in the Beef Basin planning unit for areas with appropriate vegetation cover compares in striking fashion with the site densities known for White Mesa and for Cedar Mesa. Also comparable is the dominating evidence of the Mesa Verde occupation of each of these areas. The virtual absence of Pueblo I in Beef Basin aligns its patterns more with Cedar Mesa than it does with White Mesa where one worker has argued (Thompson, 1977) for a strong Pueblo I and early Pueblo II occupation.

As the perspective is shifted from Beef Basin to the Indian Creek unit, the general site density and the evidence of Anasazi activity are both markedly diminished. The projected site density of 19 per square mile marks a sharp reduction in the evidence of human activity but, even more striking is the fact that the number of Anasazi sites falls, in terms of absolute numbers, to a point more than 75% below the count in Beef Basin. This reduction in the Anasazi site count becomes even more remarkable when it is viewed in terms of the number of sites per square mile. The results project 21 Anasazi sites per square mile of forested and brush-covered land in the Beef Basin planning unit but they point to only 1.6 Anasazi sites on similar ground in the Indian Creek unit. Even allowing for the possibility that many of the Indian Creek lithic scatters are of Anasazi origin, it is evident that the lands of the Indian Creek planning unit played a less significant role in the Anasazi adaptive strategy than did the lands in the Beef Basin region.

An apparent density of 13 sites of all kinds for each square mile in the Castle Valley planning unit indicates a still further decline in the evidence of prehistoric use. The Anasazi mark is found at only four sites which tend to occur within a few miles of the Colorado River. Finally, north of the Dolores River, evidence of the Anasazi presence is, thus far,

totally lacking. The data project only 5 lithic sites per square mile. Thus, while there is evidence of limited prehistoric activity in the Dolores unit, in terms of diagnostic material, it would appear that the void between the Mesa Verde and Fremont peoples does exist.

There is, of course, much that remains to be done. A more complete knowledge of the extent of the Mesa Verdean northward thrust and the factors that blunted it should be gained by more intensive surveys in the western parts of the Indian Creek and Castle Valley planning units. Further light may also be shed on the northward thinning of Anasazi activity by additional survey efforts south of the Monticello latitude.

Evidence of the Archaic occupation has proven tenuous in the extreme while documentation of the Southern Paiute or Shoshonean presence is little better. It is to be hoped that, by the time that a full ten percent sample of the area has been completed, evidence of the Archaic and of the Paiute will emerge to the degree that some understanding of their patterns may be obtained. The findings of this survey suggest, however, that the prospects for such data are not good. Some improvement in the results may be obtained by examining with particular care those lithic sites yielding tools and tool fragments in addition to the more common manufacturing debitage. Such sites may produce evidence, thus far unrecognized, of repeated use by non-Anasazi peoples.

Finally, more intensive survey work should be done along the Colorado River in the lower reaches of the canyons of the Beef Basin unit and along the western edges of the Castle Valley and Dolores planning units. Sharrock (1966) has already presented evidence arguing that the northward thinning of Anasazi sites is apparent within Canyonlands National Park while he failed to find any indication that Fremont peoples crossed the river from the north and the west. Lindsay's review of the archeology of Grand County supports this view rather strongly. The lands administered by the Bureau of Land Management which might produce further evidence on these issues, were not well covered during the course of this sample and research in this area should have a high priority.

In view of the fact that many additional contracts will be awarded as a part of the sampling program, some procedural suggestions based on the present experience would seem to be in order.

1. No contract solicitations should be made until the entire project design has been completed and the sample units have been marked on maps. Although they could be required to pay for them, offerors should have a set of maps available in order to prepare realistic cost estimates. Every field worker knows that grass or brush on terrain of low relief can be surveyed

at a cost much lower than that required to survey an equivalent area of broken and forested land bisected by a deep and steep-walled canyon. If, however, the grassland plot can be reached only by a 20 mile hike from the nearest road while a highway runs through the canyon in the second instance, cost estimates would be substantially altered in both cases.

2. Stratification of the sample units should continue but explicit recognition should be given to the fact that an on-the-ground examination of a unit may show that more than one ecozone is represented although the research design has characterized the unit as involving a single vegetative assemblage. In this connection, it would prove advantageous if each project were begun with a consulting session between members of the archeological survey teams and range management personnel in the district. The criteria by which tracts of land are classed as juniper-pinon, brushland, or grassland are probably quite obvious to the professional range specialist but they are not so clear to the nonspecialist. Range management personnel could also provide invaluable guidance in the identification of major groups of plant materials.

3. Surveys sampled at a 10% rate are more efficient than those sampled at the 1% level. The concern felt here is not for any presumed increase in the accuracy of the resulting projections, but is, rather for greater efficiency in the survey process. If the higher rate of sampling is used in a smaller area, the quadrants will be more numerous and, in general, closer together. This means that knowledge of access routes to quadrants will more often than not be applicable to more than one sample unit and thus much less time would be spent in locating units and in moving from one tract to another.

4. The practice of soliciting offers for contracts which then require time for the evaluation, the circulating of further questions, and then final decision while requiring that the work be completed within the same fiscal year results in an unrealistic reduction in the time available for the completion of a project. If conditions were properly spelled out, it should be legally permissible to solicit offers for a number of contracts prior to the start of a fiscal year. Priority numbers could be assigned to each project, perhaps on the basis of funds available for similar work in the previous year. Decisions could thus be made well in advance and the actual award of contracts could be made within a few days after the allocation of funds for a fiscal year have been made and the maximum lead time could thus be given the offerors. In the event that projects had been negotiated for which funds were not available, offerors could also be notified immediately after the start of the fiscal year. While the contract archeologist might occasionally find that he had devoted considerable time to preparing estimates for projects

that cancelled, this inconvenience would be outweighed by the opportunity to plan work over a longer period of time. He would be able, as he is not now able, to make adjustments in his work schedule for obtaining staffing commitments and for meeting logistic demands.

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Appendix A

Tabulated Site Data

Site Number	SA5925	SA5926	SA5927	SA5928	SA5929	SA5930	SA5931	SA5932	SA5933	SA5934
Planning Unit	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
Quad Number	216	216	216	216	216	216	216	185	185	185
Nat'l. Reg. Recomm.									X	
Condition-----										
Undisturbed										
Good	X	X	X			X			X	X
Fair				X	X		X	X		
Poor										
Destroyed										
Visible Impacts-----										
Erosion	X		X	X	X		X	X	X	X
Vandalism										
Grazing						X				
Construction										
Salvage Recomm.										
Age. Estim.										
Basis										
Chipping		X	X	X		X	X	X		X
Camp	X				X					
Habitation									X	
Storage										
Rockshelter										
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics										
Diag. Lithics										
Detritus	X	X	X	X	X	X	X	X	X	X
Collection Made	X		X		X					
Terrain-----										
Level	X	X	X		X	X	X	X	X	X
Broken										
Canyon Bottom										
Bench/Terrace										
Cave										
Slope	X	X	X		X			X	X	
Ridge			X	X		X				
Ledge										
Mesa Top										
Cliff edge										
Overhang										
Talus										
Elevation	1780	1780	1767	1792	1792	1792	1767	1829	1780	1792
Direct. of Slope	280°	270°	80°	270°	10°		220°	75°	185°	17°
Degree of Slope	11°	1-12°	4°	1-10°	5°	level	3°	4°	8°	2°
Distance to water	0.75	0.4	0.3	0.5	0.7	1.0	0.7	3.0	0.1	0.7
Direction to water	NE	NE	E	E	E	W	NW	NW	S	E
Soil-----										
Colluvial										
Alluvial										
Aeolian										
None (rock)					X					
Residual	X		X	X	X	X	X	X	X	X
Juniper/Pinon	X			X						
SW Desert Shrub		X	X		X	X	X	X	X	X

Site Number	SA5935	SA5936	SA5937	SA5938	SA5939	SA5940	SA5941	SA5942	SA5943	SA5944
Planning Unit	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
Quad Number	185	185	37	37	772	232	399	399	399	399
Nat'l. Reg. Recomm.							X	X	X	X
Condition-----										
Undisturbed					X				X	X
Good	X			X		X	X	X		
Fair			X							
Poor										
Destroyed		X								
Visible Impacts-----										
Erosion	X		X		X	X	X			
Vandalism		X								
Grazing										
Construction										
Salvage Recomm.		X								
Age. Estim.		P-II						Pueblo		
Basis		sherd						style		
Chipping	X		X	X	X	X				
Camp										
Habitation		X								
Storage										
Rockshelter		X								
Rock Art							X	X	X	X
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics		X								
Diag. Lithics								X		
Detritus	X	X	X	X	X	X				
Collection Made		X						X		
Terrain-----										
Level	X		X	X	X	X				
Broken							X		X	X
Canyon Bottom		X								
Bench/Terrace								X		
Cave										
Slope							X			
Ridge	X					X		X		
Ledge									X	X
Mesa Top										
Cliff edge										
Overhang		X								
Talus							X		X	X
Elevation	1792	1768	178	1792	1731	1865	1829	1828	1828	1828
Direct. of Slope	40°	105°		40°	105°	105°	275°	270°	260°	260°
Degree of Slope	1°	4°	flat	2°	3°	3-5°	8°	3-5°	10°	3-5°
Distance to water	3.0	0.5	1.0	0.7	0.8	2.5	0.1	2.0	0.2	0.2
Direction to water	E	SE	N	N	W	SW	W	W	W	W
Soil-----										
Colluvial										
Alluvial		X		X				X	X	X
Aeolian			X		X					
None (rock)	X									
Residual				X		X				
Juniper/Pinon	X	X	X	X		X	X	X	X	X
SW Desert Shrub					X					

Site Number	SA5945	SA5946	SA5947	SA5948	SA5949	SA5950	SA5951	SA5952	SA5953	SA5954
Planning Unit	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
Quad Number	399	399	374	53	314	593	593	593	593	593
Nat'l. Reg. Recomm.	X		X	X						
Condition-----										
Undisturbed	X				X					
Good										
Fair		X		X			X	X		
Poor						X			X	X
Destroyed			X							
Visible Impacts-----										
Erosion		X		X		X	X	X	X	X
Vandalism			X	X						
Grazing							X			
Construction										
Salvage Recomm.			X	X						
Age. Estim.		Pueblo	P-III							
Basis		rock	sherd							
Chipping		wall				X	X	X	X	X
Camp	X	X			X					
Habitation										
Storage			X	X						
Rockshelter			X	X						
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics				X						
Diag. Lithics										
Detritus	X				X	X	X	X	X	X
Collection Made	X			X	X			X		
Terrain-----										
Level	X	X			X					
Broken			X	X		X	X	X	X	
Canyon Bottom										
Bench/Terrace										
Cave										
Slope					X					
Ridge										
Ledge										
Mesa Top						X	X	X	X	X
Cliff edge				X						
Overhang			X	X						
Talus										
Elevation	1877	1871	1780	1926	1463	1929	1929	1920	1914	1914
Direct. of Slope	310°	34°	270°	180°		300°	310°	125°	155°	155°
Degree of Slope	2°	6°	2°	7°	level	2°	2-4°	3°	2°	1°
Distance to water	1.0	1.0	0.8	2.0	0.4	3.0	3.0	3.0	3.0	
Direction to water	W	W	W	E	W	SW	SW	SW	SW	
Soil-----										
Colluvial										
Alluvial					X					
Aeolian						X	X	X	X	X
None (rock)			X			X				
Residual	X	X		X						
Juniper/Pinon	X	X	X	X	X	X	X	X	X	X
SW Desert Shrub										

Site Number	SA5955	SA5956	SA5957	SA5958	SA5959	SA5960	SA5961	SA5962	SA5963	SA5964
Planning Unit	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
Quad Number	593	593	593	806	806	806	806	806	806	806
Nat'l. Reg. Recomm.				X						
Condition-----										
Undisturbed										
Good										
Fair				X	X	X		X		X
Poor	X	X	X				X		X	
Destroyed										
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X	X	X
Vandalism										
Grazing										X
Construction										
Salvage Recomm.										
Age. Estim.							P-II			
Basis							sherd			
Chipping	X	X	X	X	X	X	X	X	X	X
Camp							X			
Habitation										
Storage										
Rockshelter										
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics							X			
Diag. Lithics										
Detritus	X	X	X	X	X	X	X	X	X	X
Collection Made				X		X	X	X	X	
Terrain-----										
Level										
Broken										
Canyon Bottom										
Bench/Terrace				X	X	X	X		X	
Cave										
Slope										
Ridge										
Ledge										
Mesa Top	X	X	X							
Cliff edge										
Overhang										
Talus								X		X
Elevation	1914	1890	1926	1884	1875	1865	1835	1847	1853	1859
Direct. of Slope	290°	330°	90°	340°	90°	180°	5°	45°	10°	270°
Degree of Slope	1°	1°	1°	4°	0-2°	3°	0-7°	4°	0-4°	4-8°
Distance to water	3.0	3.0	3.0	2.6	2.5	2.5	1.5	1.5	1.5	2.0
Direction to water	SW	SW	SW	N	N	N	N	N	N	N
Soil-----										
Colluvial				X						X
Alluvial							X		X	
Aeolian	X	X								
None (rock)										
Residual					X	X		X		
Juniper/Pinon	X	X	X	X	X	X	X	X	X	X
SW Desert Shrub							X			

Site Number	SA5965	SA5966	SA5967	SA5968	SA5969	SA5970	SA5971	SA5972	SA5973	SA5974
Planning Unit	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
Quad Number	806	806	806	806	806	806	806	713	713	713
Nat'l. Reg. Recomm.										
Condition-----										
Undisturbed										
Good										
Fair		X	X	X						
Poor	X				X	X	X		X	X
Destroyed								X		
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X	X	X
Vandalism										
Grazing										
Construction										
Salvage Recomm.										
Age. Estim.										
Basis										
Chipping	X	X	X	X	X	X	X	X	X	X
Camp										
Habitation										
Storage										
Rockshelter										
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics										
Diag. Lithics										
Detritus	X	X	X	X	X	X	X	X	X	X
Collection Made	X	X				X	X		X	
Terrain-----										
Level										
Broken	X	X								X
Canyon Bottom			X							
Bench/Terrace					X	X	X		X	
Cave										
Slope										
Ridge				X				X		
Ledge										
Mesa Top										
Cliff edge										
Overhang										
Talus										
Elevation	1966	1926	1908	1969	1859	1914	1950	2002	1975	1962
Direct. of Slope	180°	45°	180°	70°	135°	15°	335°	195°		200°
Degree of Slope	3-8°	2°	6°	8-15°	4°	3°	0-7°	5°	level	6°
Distance to water	2.0	3.0	3.0	2.6	2.4	2.4	2.6	0.9	0.8	0.4
Direction to water	N	N	N	N	N	N	N	SW	SW	SW
Soil-----										
Colluvial	X		X	X	X	X	X		X	X
Alluvial		X								
Aeolian										
None (rock)										
Residual								X		
Juniper/Pinon	X	X	X	X	X	X	X	X	X	X
SW Desert Shrub										

Site Number	SA5975	SA5976	SA5977	SA5978	SA5979	SA5980	SA5981	SA5982	SA5983	SA5984.
Planning Unit	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
Quad Number	713	713	713	713	713	713	713	663	663	663
Nat'l. Reg. Recomm.			X	X	X					
Condition-----										
Undisturbed										
Good										
Fair			X	X	X					X
Poor	X	X				X				
Destroyed							X	X	X	
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X	X	X
Vandalism								X	X	
Grazing								X	X	
Construction									X	
Salvage Recomm.									X	
Age. Estim.						P-II			BM-II	
Basis						sherd			feats.	
Chipping	X	X	X	X	X	X	X	X	X	X
Camp									X	
Habitation										
Storage										
Rockshelter										
Rock Art										
Surface Rooms									X	
Subsurface Rooms										
Cists										
Granaries										
Ceramics						X		X		
Diag. Lithics						X				
Detritus	X	X	X	X	X	X	X	X	X	X
Collection Made			X	X	X	X	X	X	X	X
Terrain-----										
Level										
Broken										
Canyon Bottom										
Bench/Terrace	X	X	X		X	X	X		X	
Cave										X
Slope								X		
Ridge										
Ledge										
Mesa Top										
Cliff edge										
Overhang										
Talus				X						
Elevation	1975	1970	1901	1902	1889	1889	1874	1878	1902	1890
Direct. of Slope	170°	195°	250°	235°	220°	220°	185°	225°	215°	270°
Degree of Slope	2°	1°	2°	3°	0-2°	6°	1°	0-6°	2-6°	3°
Distance to water	1.0	1.0	0.8	0.3	0.1	10m	75m	0.5	0.6	0.6
Direction to water	S	S	S	S	E	N	NE	W	NW	W
Soil-----										
Colluvial				X						
Alluvial	X	X	X		X	X	X	X	X	X
Aeolian										
None (rock)										
Residual										
Juniper/Pinon	X	X	X	X	X	X	X	X	X	X
SW Desert Shrub										

Site Number	SA5985	SA5986	SA5987	SA5988	SA5989	SA5990	SA5991	SA5992	SA5993	SA5994
Planning Unit	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
Quad Number	663	692	692	88	88	88	88	88	88	88
Nat'l. Reg. Recomm.										
Condition-----										
Undisturbed										
Good										
Fair										
Poor	X	X	X					X		
Destroyed				X	X	X	X		X	X
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X	X	X
Vandalism										
Grazing										
Construction										
Salvage Recomm.										
Age. Estim.										
Basis										
Chipping	X	X	X	X	X	X	X	X	X	X
Camp										
Habitation										
Storage										
Rockshelter										
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics										
Diag. Lithics										
Detritus	X	X	X	X	X	X	X	X	X	X
Collection Made	X	X	X			X				
Terrain-----										
Level										
Broken										
Canyon Bottom										
Bench/Terrace										
Cave										
Slope								X	X	X
Ridge				X	X	X	X			
Ledge										
Mesa Top	X	X	X							
Cliff edge										
Overhang										
Talus										
Elevation	1927	2176	2164	2133	2121	2130	2127	2103	2133	2127
Direct. of Slope	200°	90°	220°	180°	300°	195°	345°	170°	270°	175°
Degree of Slope	6°	1°	4°	3°	2°	2°	5°	3°	3°	5°
Distance to water	0.3	1.6	1.2							
Direction to water	SW	SE	SE							
Soil-----										
Colluvial										
Alluvial			X					X		
Aeolian										
None (rock)										
Residual		X		X	X	X	X		X	X
Juniper/Pinon	X	X	X	X	X	X	X	X	X	X
SW Desert Shrub										

Site Number	SA5995	SA5996	SA5997	SA5998	SA5999	SA6000	SA6001	SA6002	SA6003	SA6004
Planning Unit	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
Quad Number	88	88	88	88	120	120	120	120	120	120
Nat'l. Reg. Recomm.								X		
Condition-----										
Undisturbed										
Good										
Fair								X		
Poor			X			X	X		X	X
Destroyed	X	X		X	X					
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X	X	X
Vandalism								X	X	
Grazing	X									
Construction					X				X	
Salvage Recomm.										
Age. Estim.										
Basis										
Chipping	X	X	X	X	X	X	X	X	X	X
Camp										
Habitation										
Storage										
Rockshelter										
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics										
Diag. Lithics										
Detritus	X	X	X	X	X	X	X	X	X	X
Collection Made								X	X	
Terrain-----										
Level										
Broken										
Canyon Bottom										
Bench/Terrace										
Cave										
Slope		X	X				X			X
Ridge	X			X	X	X			X	
Ledge										
Mesa Top										
Cliff edge										
Overhang										
Talus										
Elevation	2121	2118	2109	2078	2000	2000	2009	2006	2000	2006
Direct. of Slope	65°	270°	200°	340°	275°	210°	240°		all	285°
Degree of Slope	5°	2-4°	5°		4°	5°	5°		1-7°	5°
Distance to water			10.0	10.0	0.8	1.0	1.0	1.0	0.7	1.0
Direction to water			S	S	N	N	N	N	N	N
Soil-----										
Colluvial										
Alluvial			X	X						X
Aeolian					X					
None (rock)										
Residual	X	X				X	X	X	X	
Juniper/Pinon	X	X	X	X	X	X	X	X	X	X
SW Desert Shrub										

Site Number	SA6005	SA6006	SA6007	SA6008	SA6009	SA6010	SA6011	SA6012	SA6013	SA6014
Planning Unit	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
Quad Number	120	120	120	120	120	120	120	120	1001	1001
Nat'l. Reg. Recomm.										
Condition-----										
Undisturbed										
Good										
Fair										
Poor	X	X	X					X	X	X
Destroyed				X	X	X	X			
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X	X	X
Vandalism				X				X		
Grazing						X				
Construction				X	X					
Salvage Recomm.										
Age. Estim.									Archaic	
Basis									point	
Chipping	X	X	X	X	X	X	X	X	X	X
Camp										
Habitation										
Storage										
Rockshelter										
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics										
Diag. Lithics									X	
Detritus	X	X	X	X	X	X	X	X		X
Collection Made	X	X						X	X	
Terrain-----										
Level										
Broken				X						
Canyon Bottom										
Bench/Terrace									X	X
Cave										
Slope		X	X	X		X	X	X		
Ridge	X				X					
Ledge										
Mesa Top										
Cliff edge										
Overhang										
Talus										
Elevation	2006	2001	2015	2018	2018	2014	2000	1996	1926	1923
Direct. of Slope	all	205°	260°	220°	260°	340°	350°	15°	180°	190°
Degree of Slope	0-6°	4°	4°	4°	2°	4°	4°	5°	2-7°	3°
Distance to water	1.2	1.4	1.4	1.2	0.9	0.5	0.3	0.3	1.7	1.6
Direction to water	N	N	N	N	N	N	N	N	S	S
Soil-----										
Colluvial										
Alluvial		X	X	X	X	X	X	X	X	X
Aeolian										
None (rock)										
Residual	X									
Juniper/Pinon	X	X	X	X	X	X	X	X	X	X
SW Desert Shrub										

Site Number	SA601	SA601	SA601	SA601	SA601	SA602	SA602	SA602	SA602	SA602
Planning Unit	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
Quad Number	1001	1001	1001	1001	1001	1001	1001	1001	1001	X
Nat'l. Reg. Recomm.										X
Condition-----										
Undisturbed										
Good										
Fair										
Poor	X	X	X				X	X		
Destroyed				X	X	X			X	X
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X	X	X
Vandalism	X	X	X							X
Grazing										
Construction										
Salvage Recomm.										
Age. Estim.										
Basis										
Chipping	X	X	X	X	X	X	X	X	X	X
Camp										
Habitation										
Storage										
Rockshelter										
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics										
Diag. Lithics										
Detritus	X	X	X	X	X	X	X	X	X	X
Collection Made	X	X	X		X	X		X		
Terrain-----										
Level										
Broken										
Canyon Bottom										
Bench/Terrace	X			X		X	X	X		
Cave										
Slope		X	X		X					X
Ridge										
Ledge										
Mesa Top										
Cliff edge										
Overhang										
Talus									X	
Elevation	1920	1950	1938	1926	1926	1926	2048	1926	1999	2001
Direct. of Slope	220°	270°	240°	220°	250°	120°	40°	240°	150°	350°
Degree of Slope	1-4°	2°	2°	6°	3°	2°	2°	2°	0-6°	5°
Distance to water	1.6	1.6	1.5	1.4	1.4	1.2	1.5	1.2	0.3	0.1
Direction to water	S	SW	SW	SW	S	S	S	S	E	E
Soil-----										
Colluvial										
Alluvial	X	X	X		X	X		X		X
Aeolian										
None (rock)										
Residual				X			X			
Juniper/Pinon	X	X	X	X	X	X	X	X	X	X
SW Desert Shrub									X	

Site Number	SA6025	SA6026	SA6027	SA6028	SA6029	SA6030	SA6031	SA6032	SA6033	SA6034
Planning Unit	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
Quad Number	X	X	72	72	72	72	72	426	426	426
Nat'l. Reg. Recomm.										
Condition-----										
Undisturbed										
Good										
Fair										
Poor	X				X		X			X
Destroyed		X	X	X		X		X	X	
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X	X	X
Vandalism						X				
Grazing								X	X	
Construction										
Salvage Recomm.										
Age. Estim.								P-II		
Basis								point		
Chipping	X	X	X	X	X	X	X	X	X	X
Camp										
Habitation										
Storage										
Rockshelter										
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics										
Diag. Lithics										
Detritus	X	X	X	X	X	X	X	X	X	X
Collection Made			X				X	X		
Terrain-----										
Level									X	
Broken										
Canyon Bottom										
Bench/Terrace								X		X
Cave										
Slope	X	X	X				X			
Ridge				X	X	X				
Ledge										
Mesa Top										
Cliff edge										
Overhang										
Talus										
Elevation	2008	1987	2005	1993	2002	2004	2023	1746	1748	1728
Direct. of Slope	105°	20°	95°	310°	90°	70°	10°	340°	220°	180°
Degree of Slope	1°	3°	2°	4°	0-6°	3-7°	5°	2°	2°	0-10°
Distance to water	0.4	0.4	1.0	0.8	1.2	1.6	2.0	0.2	0.7	20m
Direction to water	E	NE	NE	NE	NE	NE	NE	NW	NW	S
Soil-----										
Colluvial										
Alluvial		X	X		X	X	X	X		X
Aeolian										
None (rock)				X						
Residual	X									
Juniper/Pinon		X	X	X	X	X	X	X	X	
SW Desert Shrub	X									X

Site Number	SA6035	SA6036	SA6037	SA6038	SA6039	SA6040	SA6041	SA6042	SA6043	SA6044
Planning Unit	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
Quad Number	426	426	426	426	426	426	X	30	752	X
Nat'l. Reg. Recomm.							X	X	X	X
Condition-----										
Undisturbed										
Good							X	X	X	X
Fair										
Poor					X					
Destroyed	X	X	X	X		X				
Visible Impacts-----										
Erosion	X	X	X	X	X	X				
Vandalism			X				X			
Grazing	X		X	X	X	X				
Construction										
Salvage Recomm.										
Age. Estim.							BM-II			BM-II
Basis							style			feats.
Chipping	X	X	X	X	X	X				
Camp										X
Habitation										
Storage										X
Rockshelter										
Rock Art							X	X	X	
Surface Rooms										
Subsurface Rooms										
Cists										X
Granaries										
Ceramics										
Diag. Lithics										
Detritus	X	X	X	X	X	X				
Collection Made						X				
Terrain-----										
Level			X	X	X	X				
Broken										
Canyon Bottom										
Bench/Terrace	X								X	
Cave										
Slope										
Ridge										
Ledge										
Mesa Top										X
Cliff edge		X					X	X		
Overhang										
Talus										
Elevation	1816	1743	1749	1759	1749	1749	1609	1609	1609	1957
Direct. of Slope	30°	130°	270°	320°	270°	240°	270°	90°	180°	90°
Degree of Slope	3°	0-4°	4°	1°	4°	3°	vert.	vert.	vert.	2°
Distance to water	100m	100m	100m	0.2	0.4	0.8	2.0	2.0	1.0	1.0
Direction to water	W	S	N	E	NE-SW	S	N	N	E	NE
Soil-----										
Colluvial									X	
Alluvial	X	X	X	X	X					
Aeolian						X				X
None (rock)										
Residual										
Juniper/Pinon					X					X
SW Desert Shrub	X	X	X	X		X	X	X	X	

Site Number	SA6045	SA6046	SA6047	SA6048	SA6049	SA6050	SA6051	SA6052	SA6053	SA6054
Planning Unit	CV	CV	CV	CV	CV	CV	CV	CV	CV	BB
Quad Number	748	748	748	748	748	753	753	753	652	365
Nat'l. Reg. Recomm.				X						
Condition-----										
Undisturbed										
Good										
Fair				X						
Poor		X						X		X
Destroyed	X		X		X	X	X		X	
Visible Impacts-----										
Erosion	X	X	X	X		X	X	X	X	X
Vandalism	X								X	
Grazing	X									
Construction	X		X						X	
Salvage Recomm.										
Age. Estim.										P-II
Basis										sherds
Chipping	X	X	X	X	X	X	X	X	X	
Camp										X
Habitation										
Storage										
Rockshelter										
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics										X
Diag. Lithics										
Detritus	X	X	X	X	X	X	X	X	X	X
Collection Made				X					X	X
Terrain-----										
Level	X		X							
Broken						X	X	X	X	
Canyon Bottom										
Bench/Terrace	X									X
Cave										
Slope										
Ridge	X	X		X	X					
Ledge										
Mesa Top										
Cliff edge										
Overhang										
Talus										
Elevation	1731	1780	1780	1804	1853	1622	1585	1573	1487	1987
Direct. of Slope	270°	330°	80°	50°	130°	130°	110°	120°	340°	50°
Degree of Slope	2-15°	4°	3°	2°	2°	7°	5°	4°	4°	4°
Distance to water	0.2	0.5	0.8	1.0	1.5	0.8	1.8	250m	1.2	
Direction to water	NW	N	NE	NE	E	S	S	E	E	
Soil-----										
Colluvial										
Alluvial										
Aeolian									X	
None (rock)										
Residual	X	X		X	X	X	X	X		X
Juniper/Pinon	X	X		X	X					X
SW Desert Shrub	X		X			X	X	X	X	

Site Number	SA6055	SA6056	SA6057	SA6058	SA6059	SA6060	SA6061	SA6062	SA6063	SA6064
Planning Unit	BB	BB	BB	BB	IC	IC	CV	CV	CV	CV
Quad Number	365	365	365	365	307	33	143	143	143	143
Nat'l. Reg. Recomm.				X	X		X	X	X	X
Condition-----										
Undisturbed									X	
Good				X	X			X		X
Fair							X			
Poor	X		X			X				
Destroyed		X								
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X		
Vandalism										
Grazing						X				X
Construction										
Salvage Recomm.										
Age. Estim.	PII-III	P-III				Paiute				
Basis	sherd	sherd				sherd				
Chipping			X		X	X	X	X	X	X
Camp	X			X						
Habitation										
Storage		X								
Rockshelter										
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics	X	X		X	X	X				
Diag. Lithics										
Detritus		X	X	X	X	X	X	X	X	X
Collection Made	X					X	X			
Terrain-----										
Level				X	X		X	X	X	
Broken										X
Canyon Bottom						X				
Bench/Terrace	X		X							
Cave										
Slope										
Ridge				X	X				X	X
Ledge										
Mesa Top										
Cliff edge		X								
Overhang										
Talus										
Elevation	1996	1999	1950	1950	1407	1243	1780	1780	1877	1902
Direct. of Slope	100°	20°	100°	220°	270°	35°	200-215°	270°		270°
Degree of Slope	10°	vert.	1°	4°	1°	2°	1-2°	1-2°	3°	8°
Distance to water				0.8	2.0	1.0	50m	10m	0.6	1.0
Direction to water				N	W	N	W	E	W	W
Soil-----										
Colluvial							X			
Alluvial								X		
Aeolian										
None (rock)		X								
Residual	X		X	X	X	X			X	X
Juniper/Pinon	X	X	X	X			X	X	X	X
SW Desert Shrub					X	X				

Site Number	SA6065	SA6066	SA6067	SA6068	SA6069	SA6070	SA6071	SA6072	SA6073	SA6074
Planning Unit	CV	CV	BB	BB	BB	BB	BB	BB	BB	BB
Quad Number	143	697	16	16	59	492	492	492	492	492
Nat'l. Reg. Recomm.	X	X	X	X		X	X	X	X	
Condition-----										
Undisturbed	X					X				
Good		X		X			X	X	X	
Fair			X							
Poor					X					X
Destroyed										
Visible Impacts-----										
Erosion		X	X	X	X				X	X
Vandalism									X	
Grazing								X		
Construction										X
Salvage Recomm.										X
Age. Estim.			P-III	P-II				P-II	Pueblo	P-II
Basis			sherd	sherd				sherd	sherd	sherd
Chipping	X	X			X					
Camp						X	X			
Habitation				X				X	X	X
Storage			X						X	
Rockshelter			X					X	X	
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists							X			
Granaries										
Ceramics			X	X				X	X	X
Diag. Lithics								X		
Detritus	X	X	X	X	X	X			X	X
Collection Made	X	X	X	X		X		X		X
Terrain-----										
Level	X	X				X	X			
Broken			X					X		X
Canyon Bottom										
Bench/Terrace				X	X					
Cave										
Slope	X									X
Ridge		X								
Ledge				X			X			
Mesa Top										
Cliff edge			X							
Overhang			X					X		
Talus										
Elevation	1829	1902	2048	2040	1901	2170	2145	2121	2133	2133
Direct. of Slope	190°	290°	245°	245°	all	0°	15°	210°	260°	270°
Degree of Slope	2°		15+°	2°	level	flat	flat	3°	3-5°	3°
Distance to water	0.2	1.2	8.0+	8.0+	0.2	1.7	1.7	1.0	0.8	0.7
Direction to water	W	E	SW	SW	E	SW	SW	S	S	SW
Soil-----										
Colluvial										
Alluvial										
Aeolian				X	X			X	X	
None (rock)										
Residual	X	X	X	X		X	X			X
Juniper/Pinon	X	X	X	X	X	X	X	X	X	X
SW Desert Shrub										

Site Number	SA6075	SA6076	SA6077	SA6078	SA6079	SA6080	SA6081	SA6082	SA6083	SA6084
Planning Unit	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Quad Number	492	492	X	110	110	110	446	446	446	446
Nat'l. Reg. Recomm.	X	X	X	X	X	X	X	X	X	X
Condition-----										
Undisturbed					X	X			X	
Good		X		X			X	X		X
Fair	X		X							
Poor										
Destroyed										
Visible Impacts-----										
Erosion		X	X	X			X	X		X
Vandalism	X									
Grazing										
Construction										
Salvage Recomm.	X									
Age. Estim.	P-III	P-III			BM-II	BM-II				P-III
Basis	sherd	sherd			feats.	feats.				sherd
Chipping			X	X			X	X	X	
Camp					X	X				
Habitation	X	X								X
Storage						X				
Rockshelter	X	X								X
Rock Art										
Surface Rooms										X
Subsurface Rooms										
Cists					X	X				
Granaries										
Ceramics	X	X								X
Diag. Lithics										
Detritus	X	X	X	X		X	X	X	X	X
Collection Made	X					X		X		
Terrain-----										
Level					X	X	X	X	X	
Broken										X
Canyon Bottom										
Bench/Terrace										
Cave										X
Slope										
Ridge				X	X	X	X			
Ledge										
Mesa Top			X					X	X	
Cliff edge										
Overhang	X									
Talus										
Elevation	2133	2121	2109	2073	2100	2073	2194	2145	2145	2145
Direct. of Slope	145°	145°		185°	185°	155°	270°		100°	120°
Degree of Slope			4°	level	level	1°	1°	level		15°
Distance to water	0.8	0.8	0.5	1.2	1.2	0.5	0.4	0.4	0.4	0.4
Direction to water	SW	SW	S	NW	NW	S	E	E	E	E
Soil-----										
Colluvial										
Alluvial										
Aeolian										
None (rock)										X
Residual	X	X	X	X	X	X	X	X	X	X
Juniper/Pinon	X	X	X	X	X	X	X	X	X	X
SW Desert Shrub										

Site Number	SA6085	SA6086	SA6087	SA6088	SA6089	SA6090	SA6091	SA6092	SA6093	SA6094
Planning Unit	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Quad Number	X	32	32	32	32	32	32	32	32	32
Nat'l. Reg. Recomm.	X	X			X			X	X	
Condition-----										
Undisturbed										
Good										
Fair	X	X			X			X	X	
Poor			X	X						
Destroyed						X	X			X
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X	X	X
Vandalism						X				
Grazing										
Construction										
Salvage Recomm.						X				
Age. Estim.		P-II	P-III	P-III	PII-III	PIII	P-III	P-II	PII-III	P-II
Basis		sherd	sherd	sherd	sherd	sherd	sherd	sherd	sherd	sherd
Chipping	X			X						
Camp		X	X	X			X			
Habitation					X			X	X	X
Storage						X				
Rockshelter						X				X
Rock Art										
Surface Rooms					X			X	X	
Subsurface Rooms										
Cists					X					
Granaries										
Ceramics		X	X	X	X	X	X	X	X	X
Diag. Lithics										
Detritus	X	X		X	X	X	X	X	X	X
Collection Made		X	X	X	X	X	X	X	X	X
Terrain-----										
Level		X	X							
Broken										
Canyon Bottom										
Bench/Terrace	X									
Cave						X	X			
Slope				X			X			
Ridge					X				X	
Ledge										
Mesa Top										
Cliff edge										
Overhang										X
Talus										
Elevation	2025	1865	1853	1829	1865	1853	1878	1867	1868	1865
Direct. of Slope	all	level	level	15°	120°	10°	120°	90°	30°	
Degree of Slope				4°	4°		6°		3°	
Distance to water		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Direction to water		NE	NE	NE	NE	NE	NE	NE	NE	NE
Soil-----										
Colluvial										
Alluvial										
Aeolian										
None (rock)						X				
Residual	X	X	X	X	X		X	X	X	X
Juniper/Pinon						X	X			
SW Desert Shrub	X	X	X	X	X			X	X	X

Site Number	SA6095	SA6096	SA6097	SA6098	SA6099	SA6100	SA6101	SA6102	SA6103	SA6104
Planning Unit	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Quad Number	32	32	32	32	32	32	32	32	32	32
Nat'l. Reg. Recomm.	X	X			X		X	X	X	
Condition-----										
Undisturbed										
Good										
Fair	X	X			X			X	X	
Poor						X				
Destroyed			X	X						X
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X	X	X
Vandalism			X							
Grazing										
Construction										
Salvage Recomm.			X							
Age. Estim.	P-II	P-III	P-III	P-III	P-III	P-II	P-II	P-III	P-III	P-III
Basis	sherd	sherd	sherd	sherd	sherd	sherd	sherd	sherd	sherd	sherd
Chipping	X	X								
Camp				X				X	X	X
Habitation					X				X	
Storage			X		X	X	X			
Rockshelter			X		X	X			X	
Rock Art										
Surface Rooms			X		X		X			
Subsurface Rooms										
Cists										
Granaries					X	X				
Ceramics		X	X	X	X	X	X	X	X	X
Diag. Lithics										
Detritus	X	X				X	X	X	X	X
Collection Made	X	X	X	X	X	X	X		X	
Terrain-----										
Level										
Broken										
Canyon Bottom										
Bench/Terrace	X	X					X	X	X	X
Cave										
Slope				X						
Ridge										
Ledge					X					
Mesa Top										
Cliff edge			X			X				
Overhang										
Talus										
Elevation	1878	1871	1875	1871	1871	1879	1877	1920	1914	1917
Direct. of Slope	160°	90°	90°	6°	130°	0°	90°	5°	80°	93°
Degree of Slope	1-4°	0-3°		4°	0-3°	1-6°	1-3°	1°	1-4°	1-3°
Distance to water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Direction to water	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Soil-----										
Colluvial										
Alluvial				X						
Aeolian										
None (rock)										
Residual	X	X	X		X	X	X	X	X	X
Juniper/Pinon										
SW Desert Shrub										

Site Number	SA6105	SA6106	SA6107	SA6108	SA6109	SA6110	SA6111	SA6112	SA6113	SA6114
Planning Unit	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Quad Number	32	32	32	102	102	102	102	102	102	102
Nat'l. Reg. Recomm.							X	X		
Condition-----										
Undisturbed										
Good								X		
Fair							X			
Poor			X		X					
Destroyed	X	X		X		X			X	X
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X	X	X
Vandalism										
Grazing										
Construction										
Salvage Recomm.										
Age. Estim.	PII-III					P-III	PI-II	P-II		
Basis	sherd					sherd	sherd	sherd		
Chipping	X	X						assoc.	X	
Camp			X	X		X				X
Habitation							X	X		
Storage					X					
Rockshelter					X			X		
Rock Art										
Surface Rooms					X		X	X		
Subsurface Rooms								X		
Cists										X
Granaries								X		
Ceramics			X			X	X			
Diag. Lithics										
Detritus	X	X	X	X			X		X	X
Collection Made			X	X			X		X	
Terrain-----										
Level										
Broken				X						
Canyon Bottom										
Bench/Terrace		X	X			X	X		X	
Cave										
Slope										
Ridge										
Ledge										
Mesa Top	X									
Cliff edge								X		
Overhang					X					
Talus										
Elevation	1923	1923	1911	1743	1744	1755	1743	1743	1749	1737
Direct. of Slope	230°	180°	180°	350°	250°	240°	180°	240°	160°	240°
Degree of Slope	3°	2-3°	2-3°	5°		5°	5°	3°	6°	7°
Distance to water	3.0	3.0	3.0	1.0	1.0	1.0	0.8	0.8	0.8	0.8
Direction to water	NE	NE	NE	N	N	N	N	N	N	N
Soil-----										
Colluvial										
Alluvial										
Aeolian				X		X	X			
None (rock)					X					
Residual	X	X	X					X		X
Juniper/Pinon										
SW Desert Shrub	X	X	X	X	X	X	X	X	X	X

Site Number	SA6115	SA6116	SA6117	SA6118	SA6119	SA6120	SA6121	SA6122	SA6123	SA6124
Planning Unit	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Quad Number	102	102	93	93	93	93	93	93	93	93
Nat'l. Reg. Recomm.				X	X	X		X	X	
Condition-----										
Undisturbed										
Good										
Fair				X	X	X		X	X	
Poor	X									
Destroyed		X	X				X			X
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X	X	X
Vandalism										
Grazing										
Construction										
Salvage Recomm.										
Age. Estim.							BMI	BMI		
Basis							feats.	feats.		
Chipping	X	X	X	X	X	X				X
Camp				X		X	X	X		
Habitation										
Storage									X	
Rockshelter				X						
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists						X		X	X	
Granaries										
Ceramics		X								
Diag. Lithics										
Detritus	X	X	X	X	X	X	X			X
Collection Made		X		X		X	X			
Terrain-----										
Level										
Broken						X	X			
Canyon Bottom				X	X			X		
Bench/Terrace	X	X	X						X	X
Cave										
Slope										
Ridge										
Ledge										
Mesa Top										
Cliff edge										
Overhang										
Talus										
Elevation	1694	1694	1706	1698	1698	1731	1719	1719	1728	1731
Direct. of Slope	0°	2°	200°	160°	190°	120°	140°	120°	190°	140°
Degree of Slope	3°	4°	2°	2°	4°	4°	5°	5°	5°	4°
Distance to water	0.2	0.2	3.5	3.5	3.5	3.5	3.5	3.6	3.6	3.8
Direction to water	N	N	SW	W	W	W	W	W	W	W
Soil-----										
Colluvial										
Alluvial					X			X		X
Aeolian			X			X	X		X	
None (rock)										
Residual	X	X		X						
Juniper/Pinon										
SW Desert Shrub	X	X	X	X	X	X	X	X	X	X

Site Number	GR702	GR703	GR704	GR705	GR706	GR707	GR708	GR709	GR710	GR711
Planning Unit	CV	CV	CV	DO	DO	DO	DO	CV	CV	CV
Quad Number	142	142	142	163	177	177	3	153	153	153
Nat'l. Reg. Recomm.		X	X	X	X		X		X	
Condition-----										
Undisturbed				X			X			
Good		X	X							
Fair					X				X	
Poor						X				
Destroyed	X							X		X
Visible Impacts-----										
Erosion	X	X			X	X		X	X	X
Vandalism	X							X		
Grazing			X							
Construction										
Salvage Recomm.	X									
Ave. Estim.	P-III,									PII-PI I
Basis	BMIII									sherd
Chipping	sherd			X	X	X	X	X		X
Camp	X		X						X	
Habitation		X								
Storage										
Rockshelter	X	X	X							
Rock Art										
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics	X									
Diag. Lithics										X
Detritus	X	X	X	X	X	X	X	X	X	X
Collection Made	X							X		X
Terrain-----										
Level	X	X	X				X			
Broken					X	X				X
Canyon Bottom				X	X	X				
Bench/Terrace								X		
Cave										
Slope					X	X				
Ridge							X			
Ledge										
Mesa Top										
Cliff edge										
Overhang	X	X	X							
Talus		X								
Elevation	1438	1414	1414	1478	1463	1450	1403	1706	1706	1703
Direct. of Slope	120°	20°	245°		210°	15°	240°	200°	90°	200°
Degree of Slope	4°	2-3°	1°	5°	5°	5°	3°	4°	5°	7°
Distance to water	0.7	0.7	0.5	4.8	0.5	0.5	1.5			1.2
Direction to water	SW	SW	S	S	NE	N	W			E
Soil-----										
Colluvial										
Alluvial	X	X	X							
Aeolian										
None (rock)										
Residual				X	X	X	X	X	X	X
Juniper/Pinon					X	X		X	X	X
SW Desert Shrub	X	X	X	X			X			

Site Number	GR712	GR713	GR714	GR715	GR716	GR717	GR718	GR719	GR720	GR721
Planning Unit	CV	CV	DO	DO	DO	DO	CV	CV	CV	CV
Quad Number	153	153	163	163	163	163	115	115	115	115
Nat'l. Reg. Recomm.				X					X	
Condition-----										
Undisturbed										
Good									X	
Fair				X						
Poor						X				X
Destroyed	X	X	X		X		X	X		
Visible Impacts-----										
Erosion	X	X	X	X	X	X	X	X		X
Vandalism										
Grazing										
Construction		X								
Salvage Recomm.		X	X							
Age. Estim.		Paiute						BMI	BMI	
Basis		point						feats.	style	
Chipping	X	X	X	X	X	X	X			X
Camp								X		
Habitation										
Storage										
Rockshelter								X		
Rock Art									X	
Surface Rooms										
Subsurface Rooms										
Cists										
Granaries										
Ceramics										
Diag. Lithics		X								
Detritus	X	X	X	X	X	X	X	X		X
Collection Made	X	X	X		X			X		
Terrain-----										
Level										
Broken	X	X								
Canyon Bottom										
Bench/Terrace			X	X						
Cave										
Slope				X						
Ridge										
Ledge									X	
Mesa Top					X	X	X			X
Cliff edge										
Overhang								X		
Talus										
Elevation	1703	1706	1463	1500	1530	1499	1317	1341	1341	1390
Direct. of Slope	200°	140°	230°	all	240°	230°	240°	180°	180°	240°
Degree of Slope	1°	2°	6°	1-15°	4°	4°	2°	2°	vert.	5°
Distance to water	1.4	1.5	4.5	1.8	4.3	4.4		0.25	0.25	0.3
Direction to water	E	E	S	W	S	S		SW	SW	W
Soil-----										
Colluvial										
Alluvial										
Aeolian										
None (rock)									X	
Residual	X	X	X	X	X	X	X	X		X
Juniper/Pinon	X	X								
SW Desert Shrub			X	X	X	X	X	X	X	X

Appendix B

Cultural Resource Evaluations

1. Date
 2. Eater
 3. State
 4. District
 5. Plan Unit

UNITED STATES
 DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT

CLASS
 SUB
 RANG.
 7

QUALITY EVALUATION SCORE SHEET

6. Cultural Resource Activity

8. KEY FACTORS

Depth & Permanency
 Architectural/Artistic
 Size
 Age
 Uniqueness
 Association
 Representativeness
 Condition
 Informational Potential

9. RATING AREA

10. POINT MAXIMUM

13. REMARKS

NO. (a)	NAME (b)	10. POINT MAXIMUM										11. TOTAL SCORE	12. CLASS	13. REMARKS
		4	4	4	4	4	4	4	4	4	4			
1	42-SA-5925	1	0	1	2	1	2	2	3	1	13	S3	Small camp site.	
2	42-SA-5926	1	0	1	1	1	2	2	2	1	11	S3	Lithic scatter	
3	42-SA-5927	2	0	2	0	1	2	1	1	0	9	S4	Lithic scatter	
4	42-SA-5928	1	0	1	0	1	2	1	1	0	7	S4	Lithic scatter	
5	42-SA-5929	2	0	1	1	1	2	0	1	0	8	S4	Lithic scatter	
6	42-SA-5930	1	0	1	0	1	2	1	1	0	7	S4	Lithic scatter	
7	42-SA-5931	1	0	1	0	1	2	1	2	0	8	S4	Lithic scatter	
8	42-SA-5932	2	0	3	0	2	2	3	3	2	17	S3	Quarry site	
9	42-SA-5933	2	0	1	2	2	2	0	2	2	15	S3	Small camp site	
10	42-SA-5934	2	0	2	0	1	2	0	2	2	11	S3	Lithic scatter	
11	42-SA-5935	1	0	1	0	1	2	1	1	0	7	S4	Lithic scatter	
12	42-SA-5936	3	1	2	0	2	0	2	1	1	13	S3	Rock shelter (potted)	
13	42-SA-5937	1	0	1	0	1	0	2	1	0	7	S4	Lithic scatter	
14	42-SA-5938	1	0	1	0	1	0	1	1	0	6	S4	Small lithic scatter	
15	42-SA-5939	1	0	1	0	1	0	1	1	1	7	S4	Core prep. area	
16	42-SA-5940	2	0	3	0	2	2	2	2	2	15	S3	Large manufacturing area	
17	42-SA-5941	0	0	2	2	1	2	2	3	2	14	S3	Petroglyphs	
18	42-SA-5942	0	0	2	2	3	2	3	3	2	17	S3	Large petroglyphs	
19	42-SA-5943	0	0	1	2	1	2	2	2	1	11	S3	Petroglyphs	
20	42-SA-5944	0	0	1	2	1	1	1	1	1	8	S4	Petroglyph panel	
21	42-SA-5945	1	0	1	1	3	1	3	4	2	17	S3	Roasting pit	
22	42-SA-5946	0	0	1	0	2	2	2	2	1	10	S3	Fire pit	
23	42-SA-5947	2	1	1	2	1	2	1	1	1	13	S3	Granary	
24	42-SA-5948	2	2	1	2	1	2	2	1	1	14	S3	Granary	

1. Date	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT QUALITY EVALUATION SCORESHEET	CLASS	SCORE RANGE	
2. Rater		7		
3. State				
4. District		6. Cultural Resource Activity		
5. Plan Unit				

8. KEY FACTORS		11. TOTAL SCORE										12. CLASS	13. REMARKS
9. RATING AREA		10. POINT MAXIMUM											
NO. (a)	NAME (b)	4	4	4	4	4	4	4	4	4	4		
		Depth & Permanency Architectural/Artistic	Size	Age	Uniqueness	Association	Representativeness	Condition	Informational potential				
25	42-SA-5949	1	0	2	0	1	1	2	2	1	10	S3	Hunting site
26	42-SA-5950	1	0	1	0	1	0	2	2	1	8	S4	Chipping site
27	42-SA-5951	1	0	2	0	1	0	2	2	1	9	S4	Chipping
28	42-SA-5952	0	0	1	0	1	0	2	2	1	7	S4	Chipping
29	42-SA-5953	0	0	1	0	1	0	2	1	0	5	S4	Chipping
30	42-SA-5954	0	0	2	0	1	0	2	1	0	6	S4	Chipping
31	42-SA-5955	0	0	2	0	1	0	2	1	0	6	S4	Chipping'
32	42-SA-5956	0	0	1	0	1	0	2	1	0	5	S4	Chipping
33	42-SA-5957	0	0	1	0	1	0	1	1	0	4	S4	Chipping
34	42-SA-5958	0	0	2	0	1	0	2	2	1	7	S4	Chipping
35	42-SA-5959	0	0	1	0	1	0	2	2	1	7	S4	Chipping
36	42-SA-5960	0	0	2	0	1	0	2	2	1	8	S4	Chipping
37	42-SA-5961	0	0	2	0	1	0	2	1	1	7	S4	Chipping-ceramic
38	42-SA-5962	0	0	3	0	1	0	2	2	1	9	S4	Chipping
39	42-SA-5963	0	0	3	0	1	0	2	1	1	9	S4	Chipping
40	42-SA-5964	0	0	2	0	1	0	2	2	2	9	S4	Chipping
41	42-SA-5965	0	0	3	0	1	0	2	1	1	8	S4	Chipping
42	42-SA-5966	0	0	2	0	1	0	2	2	1	8	S4	Chipping
43	42-SA-5967	0	0	2	0	1	0	2	2	1	8	S4	Chipping
44	42-SA-5968	0	0	3	0	1	0	2	2	1	9	S4	Chipping
45	42-SA-5969	0	0	1	0	1	0	2	1	1	6	S4	Chipping
46	42-SA-5970	0	0	1	0	1	0	2	1	1	6	S4	Chipping
47	42-SA-5971	0	0	2	0	1	0	2	1	1	7	S4	Chipping
48	42-SA-5972	0	0	1	0	1	0	2	0	0	4	S4	Chipping

1. Date	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT QUALITY EVALUATION SCORESHEET	CLASS	SCORE RANGE
2. Rater			7
3. State			
4. District		6. Cultural Resource Activity	
5. Plan Unit			

8. KEY FACTORS

9. RATING AREA		10. POINT MAXIMUM										11. TOTAL SCORE	12. CLASS	13. REMARKS
NO. (#)	NAME (b)	4	4	4	4	4	4	4	4	4	4			
49	42-SA-5973	0	0	2	0	1	0	2	1	1	7	S4	Chipping	
50	42-SA-5974	0	0	1	0	1	0	2	1	1	6	S4	Chipping	
51	42-SA-5975	0	0	1	0	1	0	1	1	1	5	S4	Badly eroded - small	
52	42-SA-5976	0	0	1	0	1	1	1	1	1	6	S4	Badly sheet eroded	
53	42-SA-5977	0	0	1	0	1	0	1	2	1	6	S4	Some erosion	
54	42-SA-5978	0	0	1	0	2	0	1	2	1	7	S4	Compact, huge flakes	
55	42-SA-5979	1	0	3	0	3	1	1	2	2	13	S3	Good lithic site	
56	42-SA-5980	1	0	1	2	1	2	1	2	1	11	S3	Good site on seep - points/sherds.	
57	42-SA-5981	0	0	1	0	1	1	0	0	1	4	S4	Badly eroded.	
58	42-SA-5982	0	0	1	1	1	0	0	0	1	4	S4	Badly collected, eroded	
59	42-SA-5983	2	1	3	2	1	1	1	1	2	14	S3	Badly destroyed, very large	
60	42-SA-5984	0	0	1	0	1	1	1	0	1	5	S4	Badly eroded, small	
61	42-SA-5985	0	0	1	0	2	0	0	0	1	4	S4	Badly eroded	
62	42-SA-5986	0	0	2	1	1	0	1	1	2	8	S4	Eroded, road impact	
63	42-SA-5987	0	0	2	0	1	0	1	1	1	6	S4	Eroded	
64	42-SA-5988	0	0	2	0	1	0	1	1	1	6	S4	Chained and eroded	
65	42-SA-5989	0	0	1	0	1	0	1	1	1	5	S4	Chained and eroded	
66	42-SA-5990	0	0	1	0	1	0	1	1	1	5	S4	Chained and eroded	
67	42-SA-5991	0	0	1	0	1	0	0	0	1	3	S4	Chained and eroded	
68	42-SA-5992	0	0	1	0	1	0	1	1	1	5	S4	Eroded, sparse material	
69	42-SA-5993	0	0	1	0	0	0	1	0	1	3	S4	Chained, eroded	
70	42-SA-5994	0	0	1	0	1	0	1	0	1	4	S4	Eroded, cattle trampled.	
71	42-SA-5995	0	0	1	0	1	0	1	0	1	4	S4	Eroded, chained	
72	42-SA-5996	0	0	1	0	1	0	1	0	1	4	S4	Eroded, chained	

1. Date _____
 2. Rater _____
 3. State _____
 4. District _____
 5. Plan Unit _____

UNITED STATES
 DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT

CLASS _____
 SCORE RANGE _____
 7

QUALITY EVALUATION SCORESHEET

6. Cultural Resource Activity _____

8. KEY FACTORS

9. RATING AREA		10. POINT MAXIMUM										11. TOTAL SCORE	12. CLASS	13. REMARKS
NO. (a)	NAME (b)	4	4	4	4	4	4	4	4	4	4			
73	42-SA-5997	0	0	1	0	1	1	0	1	1	5	S4	Chipping detritus only	
74	42-SA-5998	0	0	1	0	1	1	0	1	1	5	S4	Chipping detritus only	
75	42-SA-5999	0	0	1	0	1	1	1	0	1	5	S4	Under transmission line	
76	42-SA-6000'	0	0	1	0	0	1	1	0	1	4	S4	In wash area-scattered	
77	42-SA-6001	0	0	1	0	0	1	1	0	1	4	S4	Washed from higher ground	
78	42-SA-6002	1	0	2	2	1	1	1	1	1	6	S3	Broken glass found, fairly level	
79	42-SA-6003	1	0	2	2	1	1	1	1	1	10	S3	Associated with 51-B	
80	42-SA-6004	0	0	1	0	0	1	1	0	1	4	S4	Eroded away-drainage area	
81	42-SA-6005	0	0	1	0	0	1	1	0	1	4	S4	Small scatter on knoll	
82	42-SA-6006	0	0	1	0	0	1	1	0	1	4	S4	Close to flats in wash area	
83	42-SA-6007	0	0	1	0	0	1	1	0	1	4	S4	Badly eroded	
84	42-SA-6008	0	0	1	0	0	1	1	0	1	4	S4	At side of possible drill pad	
85	42-SA-6009	0	0	1	0	0	1	1	0	1	4	S4	Road cuts through	
86	42-SA-6010	0	0	1	0	0	1	1	0	1	4	S4	Near fence line in wash area	
87	42-SA-6011	0	0	1	0	0	1	1	0	1	4	S4	Slope washing	
88	42-SA-6012	0	0	1	0	0	1	1	0	1	4	S4	Near existing reservoir	
89	42-SA-6013	0	0	1	2	1	1	1	0	1	7	S4	Slick rock on cliff edge overlooking major wash	
90	42-SA-6014	0	0	1	0	1	1	1	0	1	5	S4	Just down from 73-B	
91	42-SA-6015	1	0	2	0	1	1	1	0	1	7	S4	Disturbed by caterpillar erosion	
92	42-SA-6016	0	0	1	0	1	1	1	0	1	5	S4	Badly eroded - washing	
93	42-SA-6017	0	0	1	0	1	1	1	0	1	5	S4	Small scatter flat area in sage	
94	42-SA-6018	0	0	1	0	1	1	1	0	1	5	S4	On edge of major wash on slick rock	
95	42-SA-6019	0	0	1	0	1	1	1	0	1	5	S4	Chained area	
96	42-SA-6020	0	0	1	0	1	1	1	0	1	5	S4	Chained area	

1. Date	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT QUALITY EVALUATION SCORESHEET	CLASS	SCORE RANGE	
2. Eater			7	
3. State				
4. District		6. Cultural Resource Activity		
5. Plan Unit				

8. KEY FACTORS

9. RATING AREA		10. POINT MAXIMUM										11. TOTAL SCORE		12. CLASS	13. REMARKS
NO. (a)	NAME (b)	4	4	4	4	4	4	4	4	4	4				
97	42-SA-6021	1	0	1	0	1	1	1	1	1	7	S4	Top of ledge, undisturbed		
98	42-SA-6022	1	0	1	0	1	1	1	1	1	7	S4	Top of ledge, down from 81-B		
99	42-SA-6023	0	0	1	0	0	1	1	0	1	4	S4	Wash area around slick rock		
100	42-SA-6024	0	0	2	0	0	1	1	0	1	5	S4	General slope in slick rock - washing		
101	42-SA-6025	0	0	1	0	0	1	1	0	1	4	S4	Fairly level, edge of wash		
102	42-SA-6026	0	0	1	0	0	1	1	0	1	4	S4	Base of small knoll		
103	42-SA-6027	0	0	1	0	0	1	1	0	1	4	S4	Limited use		
104	42-SA-6028	0	0	1	0	0	1	1	0	1	4	S4	Bottom edge of slick rock		
105	42-SA-6029	1	0	2	0	1	1	2	2	1	10	S3	Top of juniper covered knoll		
106	42-SA-6030	1	0	2	0	1	1	1	1	1	9	S4	Covers gradual slope extending from trees		
107	42-SA-6031	0	0	2	0	0	1	1	1	1	6	S4	Portions of slope - washing		
108	42-SA-6032	0	0	1	2	1	1	1	0	1	7	S4	Core material found in wash area		
109	42-SA-6033	0	0	1	0	1	1	1	0	1	5	S4	Washing-used to graze cattle		
110	42-SA-6034	2	0	2	0	2	1	2	2	2	13	S3	Massive quarry on ledge above cliff		
111	42-SA-6035	0	0	1	0	1	1	1	0	1	5	S4	Small flake concentration on ledge above quarry		
112	42-SA-6036	0	0	1	0	1	1	1	0	1	5	S4	Used to graze cattle		
113	42-SA-6037	0	0	1	0	1	1	1	0	1	5	S4	Sandy area around slick rock - grazing		
114	42-SA-6038	0	0	1	0	1	1	1	0	1	5	S4	Heavily grazed		
115	42-SA-6039	0	0	1	0	1	1	1	0	1	5	S4	At mouth of canyon-grazed		
116	42-SA-6040	0	0	1	0	1	1	1	0	1	5	S4	Washing - grazing		
117	42-SA-6041	0	1	1	2	1	0	1	3	1	10	S3	Petroglyphs on large boulder		
118	42-SA-6042	1	1	1	0	1	0	1	2	1	8	S4	Petroglyphs - snake design on boulder		
119	42-SA-6043	1	1	1	0	1	0	1	2	1	8	S4	Petroglyphs - anthropomorph on boulder		
120	42-SA-6044	3	1	1	0	2	1	2	2	2	14	S3	Slab-lined cist on mesa top		

1. Date	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT QUALITY EVALUATION SCORESHEET	CLASS	SCORE RANGE	
2. Bator		7		
3. State				
4. District		6. Cultural Resource Activity		
5. Plan Unit				

8. KEY FACTORS		Depth & Permanency	Architectural/Artistic	Size	Age	Uniqueness	Association	Representativeness	Condition	Informational Potential	11. TOTAL SCORE	12. CLASS	13. REMARKS
9. RATING AREA		10. POINT MAXIMUM											
NO. (a)	NAME (b)	4	4	4	4	4	4	4	4	4			
121	42-SA-6059	1	0	2	2	1	2	0	2	1	11	S3	Chipping area
122	42-SA-6060	2	0	3	0	1	1	1	2	2	12	S3	Chipping area
123	42-SA-6045	0	0	1	0	1	1	1	0	1	5	S4	Vandalized, grazed, eroded, roads
124	42-SA-6046	0	0	1	0	1	1	1	1	1	6	S4	Flat area on top of lower knoll
125	42-SA-6047	0	0	1	0	1	1	1	0	1	5	S4	Erosion, grazing, under power line
126	42-SA-6048	0	0	1	0	1	1	1	0	1	5	S4	Small scatter of flakes in wash area
127	42-SA-6049	0	0	1	0	1	1	1	0	1	5	S4	Chained area
128	42-SA-6050	0	0	1	0	1	1	1	0	1	5	S4	In wash - erosion
129	42-SA-6051	0	0	1	0	1	1	1	0	1	5	S4	Slick rock wash area
130	42-SA-6052	0	0	1	0	1	1	1	0	1	5	S4	Extensive washing - erosion
131	42-SA-6053	0	0	1	0	1	1	1	0	1	5	S4	Washing - sand dunes and slick rock
132	42-SA-6061	2	0	3	0	2	1	2	2	2	14	S3	Large chipping area
133	42-SA-6062	2	0	2	0	1	1	2	2	2	12	S3	Medium chipping and chert site
134	42-SA-6063	1	0	1	0	1	1	1	2	0	7	S4	One meter lithic scatter
135	42-SA-6064	1	0	1	0	1	1	1	2	0	7	S4	Three meter lithic scatter
136	42-SA-6065	1	0	1	2	2	1	2	2	2	14	S3	Hunting camp
137	42-SA-6066	2	0	3	0	2	1	2	2	2	14	S3	Large manufacturing area
138	42-GR-702	2	0	1	2	2	2	2	0	1	12	S3	Rock shelter
139	42-GR-703	2	0	1	0	2	2	2	1	1	11	S3	Rock shelter
140	42-GR-704	2	0	1	0	2	2	2	1	1	11	S3	Rock shelter
141	42-GR-709	0	0	1	0	1	1	1	0	1	5	S4	Vandalized, in wash area
142	42-GR-710	0	0	1	0	1	1	1	0	1	5	S4	Small lithic scatter - traces of ash
143	42-GR-711	0	0	1	2	1	1		0	1	7	S4	Small lithic scatter-washing
144	42-GR-712	0	0	1	0	1	1	1	0	1	5	S4	Small lithic scatter-washing

1. Date	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT QUALITY EVALUATION SCORESHEET	CLASS	SCORE RANGE	
2. Eater		7		
3. State				
4. District		6. Cultural Resource Activity		
5. Plan Unit				

8. KEY FACTORS

9. RATING AREA		10. POINT MAXIMUM										11. TOTAL SCORE		12. CLASS	13. REMARKS
NO. (a)	NAME (b)														
		4	4	4	4	4	4	4	4	4	4				
		Depth & Permanency Architectural	Size	Age	Uniqueness	Association	Representativeness	Condition	Informational Potential						
145	42-GR-713	0	0	1	1	1	1	0	1	6	S4	Small lithic scatter-washing			
146	42-GR-718	0	0	1	0	1	1	1	0	1	5	S4	Extensive erosion on top of mesa		
147	42-GR-719	1	0	1	2	2	1	1	1	1	10	S3	Badly potted		
148	42-GR-720	0	1	1	0	1	1	1	0	1	6	S4	Petroglyphs - the smallest is incomplete		
149	42-GR-721	0	0	1	0	1	1	1	0	1	5	S4	Top of mesa by cliffs		
150	42-GR-722	0	0	1	0	1	1	1	0	1	5	S4	Cave with fill gone, one mano/matate		
151	42-SA-6054	0	0	1	2	1	1	1	0	1	7	S4	Small lithic and ceramic scatter - washing		
152	42-SA-6055	2	1	2	2	1	1	1	1	1	12	S3	Large amounts of ceramics, few lithics, possible bldg. <i>rock</i>		
153	42-SA-6056	2	1	1	2	1	1	0	0	1	9	S4	Small granary		
154	42-SA-6057	0	0	1	0	1	1	0	1	1	5	S4	Small chipping site		
155	42-SA-6058	0	0	1	0	3	1	0	2	2	9	S4	Small burned area		
156	42-SA-6067	2	2	2	2	2	2	2	3	2	19	S2	Granaries, structures		
157	42-SA-6068	2	1	1	2	2	2	2	2	2	16	S3	Structure, burn area		
158	42-SA-6069	2	0	3	0	2	2	1	2	1	13	S3	Large lithic scatter		
159	42-SA-6070	1	0	2	0	2	2	1	2	1	11	S3	Medium lithic scatter		
160	42-SA-6071	2	0	1	0	3	2	1	2	2	13	S3	Fire pits		
161	42-SA-6072	2	2	2	2	1	2	2	1	1	15	S3	Overhang-rock shelter		
162	42-SA-6073	2	2	2	2	2	2	2	2	2	18	S3	Dwellings, granaries		
163	42-SA-6074	2	2	2	2	2	2	2	1	1	16	S3	Room block, destroyed		
164	42-SA-6075	2	2	3	2	2	2	3	3	1	20	S2	Dwelling area - rooms		
165	42-SA-6076	1	0	1	2	1	2	1	1	1	10	S3	Small overhang		
166	42-SA-6077	1	0	1	0	1	2	1	1	1	8	S4	Lithic scatter		
167	42-SA-6078	1	0	1	0	1	2	1	1	1	8	S4	Small lithic scatter		
168	42-SA-6079	1	0	1	0	2	2	2	3	2	13	S3	Fire pits		

1. Date	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT QUALITY EVALUATION SCORE SHEET	CLASS	SCORE RANGE	
2. Bator		7		
3. State				
4. District		6. Cultural Resource Activity		
5. Plan Unit				

8. KEY FACTORS

9. RATING AREA		10. POINT MAXIMUM										11. TOTAL SCORE		12. CLASS	13. REMARKS
NO. (a)	NAME (b)	4	4	4	4	4	4	4	4	4	4				
		4	4	4	4	4	4	4	4	4	4				
169	42-SA-6080	1	0	1	0	2	2	2	3	2	13	S3	Fire pits		
170	42-SA-6081	1	0	1	0	1	2	2	2	1	10	S3	Lithic scatter		
171	42-SA-6082	1	0	1	0	1	2	2	3	1	11	S3	Lithic scatter		
172	42-SA-6083	1	0	2	0	1	2	2	2	1	11	S3	Lithic scatter		
173	42-SA-6084	2	2	2	2	1	2	2	2	2	17	S3	Small P-III unit		
174	42-SA-6085	0	0	1	0	1	1	1	1	1	6	S4	Chipping detritus only		
175	42-SA-6086	1	0	1	2	1	1	2	0	1	9	S4	Small lithic, ceramic scatter		
176	42-SA-6087	1	0	1	2	0	1	1	0	1	7	S4	Small ceramic site in open sage		
177	42-SA-6088	0	0	1	2	0	1	1	0	1	6	S4	Small ceramic site in open sage		
178	42-SA-6089	2	1	2	2	1	1	2	1	2	14	S3	Lithic and ceramic at base of hill slope		
179	42-SA-6090	1	1	1	2	1	1	0	0	1	8	S4	Small possible granary at base of hill		
180	42-SA-6091	2	0	1	2	1	1	1	0	1	9	S4	Small rock shelter, lithics and few sherds		
181	42-SA-6092	2	1	1	2	1	1	2	1	2	19	S3	Small circular structure, pot sherds		
182	42-SA-6093	3	2	3	2	2	3	3	1	2	21	S2	Large multi-room structure		
183	42-SA-6094	2	1	1	0	1	1	1	0	1	8	S4	Rock outline next to material rock outcrop		
184	42-SA-6095	2	0	1	2	1	1	1	0	1	9	S4	Large lithic scatter		
185	42-SA-6096	2	0	1	2	1	1	1	0	1	9	S4	Large lithic scatter-washing		
186	42-SA-6097	1	1	1	2	1	1	1	0	1	9	S4	numerous granaries along cliff		
187	42-SA-6098	0	0	1	2	1	1	1	0	1	7	S4	Beneath granaries-washing		
188	42-SA-6099	2	1	1	2	1	1	1	1	1	11	S3	Rock outline of structure and granary		
189	42-SA-6100	2	2	1	2	1	1	1	3	1	14	S3	1 complete granary, portion of wall standing; corn cob		
190	42-SA-6101	2	2	1	2	0	1	1	1	1	11	S3	Rectangular structure as Lyon Cave		
191	42-SA-6102	0	0	1	2	0	1	0	0	1	5	S4	Ceramic and lithic scatter on bench		
192	42-SA-6103	2	2	1	2	1	1	2	1	1	13	S3	1 room structure with ceramics and lithics		

1. Date	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT QUALITY EVALUATION SCORESHEET	CLASS	SCORE RANGE	
2. Rater			7	
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5. Plan Unit				

8. KEY FACTORS		10. POINT MAXIMUM										11. TOTAL SCORE		12. CLASS	13. REMARKS
9. RATING AREA															
NO. (a)	NAME (b)	4	4	4	4	4	4	4	4	4	4				
		Depth & Permanency Architectural Artistic	Size	Area	Uniqueness	Association	Representativeness	Condition	Informational Potential						
193	42-SA-6104	0	0	1	2	1	1	1	0	1	7	S4	Small lithic scatter with sherds, washing		
194	42-SA-6105	0	0	1	0	1	1	1	0	1	5	S4	Small lithic scatter		
195	42-SA-6106	0	0	1	0	1	1	1	0	1	5	S4	Small lithic scatter-washing		
196	42-SA-6107	0	0	1	2	1	1	1	0	1	7	S4	On flat rock outcrop directly below cliff		
197	42-SA-6108	0	0	1	0	1	1	1	0	1	5	S4	Badly eroded washing, 3 monos found		
198	42-SA-6109	2	1	1	0	1	1	1	1	1	9	S4	Small granary, slick rock		
199	42-SA-6110	0	0	1	2	1	1	1	0	1	7	S4	Small ceramic scatter-washing		
200	42-SA-6111	2	2	1	2	1	1	2	1	2	14	S3	Medium circular structure with numerous sherds found		
201	42-SA-6112	2	2	1	2	1	1	2	1	2	14	S3	2 possible structures with possible granary		
202	42-SA-6113	0	0	1	2	1	1	1	0	1	7	S4	Small lithic scatter with tools - washing		
203	42-SA-6114	1	0	1	0	1	1	1	1	1	7	S4	Slab-lined fire pit		
204	42-SA-6115	0	0	1	0	1	1	1	0	1	5	S4	Small lithic scatter		
205	42-SA-6116	0	0	1	2	1	1	1	0	1	7	S4	Small lithic and ceramic scatter - eroded		
206	42-SA-6117	0	0	1	0	1	1	1	0	1	5	S4	Small lithic scatter in wash area		
207	42-SA-6118	2	1	2	0	1	1	1	1	1	10	S3	Rock shelter with high concentration of lithics		
208	42-SA-6119	0	0	1	0	1	1	1	0	1	5	S4	Small lithic scatter-wash area		
209	42-SA-6120	0	0	1	0	1	1	1	0	1	5	S4	Lithic scatter with small cist		
210	42-SA-6121	0	0	1	0	1	1	1	0	1	5	S4	Lithic scatter with small cist - below 153-B		
211	42-SA-6122	0	0	1	0	1	1	1	0	1	5	S4	Small fire pit		
212	42-SA-6123	0	0	1	0	1	1	1	0	1	5	S4	Small cist		
213	42-SA-6124	0	0	1	0	1	1	1	0	1	5	S4	Small lithic scatter		
214	42-GR-705	2	0	2	0	1	2	1	1	1	10	S3	Chipping area		
215	42-GR-706	1	0	1	0	1	2	1	1	1	8	S4	Chipping area		
216	42-GR-707	1	0	3	0	1	2	1	1	1	10	S3	Large Chipping area		

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